



GenMega SSL/TLS Configuration Guide For DPL Customers

Proper SSL/TLS Setup for your GenMega ATM
Using DPL's Hercules Wireless Modem



Table of Contents

Purpose	3
Prerequisites.....	3
Steps.....	4
1. ATM TCP/IP Setup.....	4
Alternative: Static IP Configuration	5
2. Enabling SSL/TLS Properly.....	6
3. Installation of Root Certificate Files (rootcert.pem).....	8
4. SSL Host Configuration	11
5. Testing SSL.....	12
Conclusion	13



Purpose

This guide instructs DPL customers on how to properly configure SSL/TLS on GenMega ATMs using a Hercules wireless modem. This guide is based on the GenMega G2500 ATM – the required steps for your model may vary. The document will take you through:

- Installing the DPL [rootcert.pem](#) file
- Setting up address-based host setup
- Enabling certificate and hostname verification
- Enabling SSL/TLS

By the end of the document you will have a securely connected ATM that should be resilient to Man-in-the-Middle (MITM) attacks involving tampering with the internal link between the ATM and the Hercules modem installed in your unit.

Prerequisites

To successfully complete the following steps you will need:

- To ensure your Hercules wireless modem and ATM have the latest firmware updates. If unsure, please contact DPL's technical support department.
- The DPL [rootcert.pem](#) or a **rootcert.pem** provided by your payment processor

Examples of the required information will be provided in the steps below.

Steps

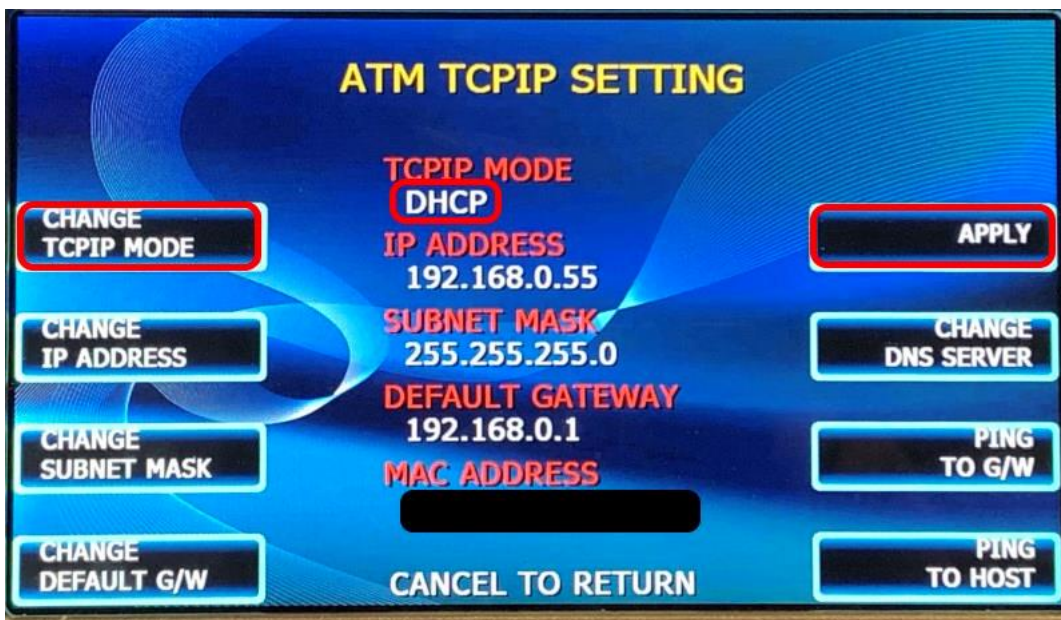
1. ATM TCP/IP Setup

Before setting up SSL/TLS, confirm you are on a TCP/IP ATM configured for DHCP or static IP as instructed below.

NOTE: DHCP will enable dynamic allocation of the IP address from the Hercules modem that the ATM is plugged into. This is preferred as it means changes to the ATM are not required if changes are made to the settings of the Hercules modem. Static IP can be more stable for some older ATMs but requires manual ATM reconfiguration if the Hercules modem is updated to new addresses (or other network topology changes).

- a) Use the ATM Operator menu to navigate to the TCP/IP menu. Using the path listed below.

ATM Operator Menu > System Setup > Device Setup > ATM TCP/IP Settings



- b) Enable either DHCP (preferred for newer installations) or a static IP (using information provided by the installation site or the Hercules modem being used) using the **Change TCP/IP Mode** button (and other buttons if using static).
- c) Once your information has been input, press the **Apply** button to save the changes.

NOTE: If you have switched from Static to DHCP or vice versa, you may need to reboot the ATM now or after completing the remaining steps. See how to reboot your ATM under "**Testing SSL**" below.

Alternative: Static IP Configuration

The Hercules can also be used with a static IP configuration. If that is required, use the information provided below and your ATM will be connected to the Hercules. Use the **Change TCP/IP Mode** button to switch to static configuration and enter the following:

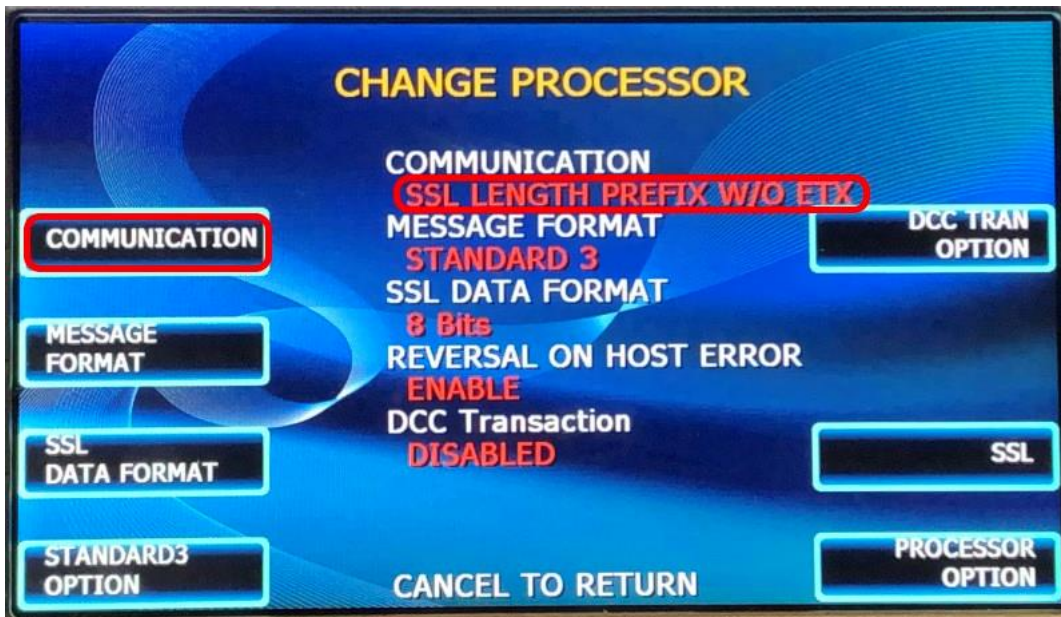
- **IP Address:** 192.168.0.55
- **Subnet Mask:** 255.255.255.0
- **Gateway:** 192.168.0.1
- **DNS:** 192.168.0.1

2. Enabling SSL/TLS Properly

In this section we will enable TLS 1.2 to secure the ATM against man-in-the-middle attacks on the Ethernet line, enable hostname verification to block certificate spoofing, and enable certificate verification to make sure the ATM is verifying the certificate chain.

- a) Navigate to the **Communication** screen using the path listed below. Configure the **Communication** field to **SSL Length Prefix w/o ETX** or check with your payment processor for the setup you require.

ATM Operator Menu > Customer Setup > Change Processor



NOTE: For the Hercules you can use Standard 1 or Standard 3 **Message Format**.

- b) Navigate to the **SSL Configuration** screen using the path listed below. Configure the options for secure communication by pressing the **SSL** button on the **Change Processor** screen.

ATM Operator Menu > Customer Setup > Change Processor > SSL



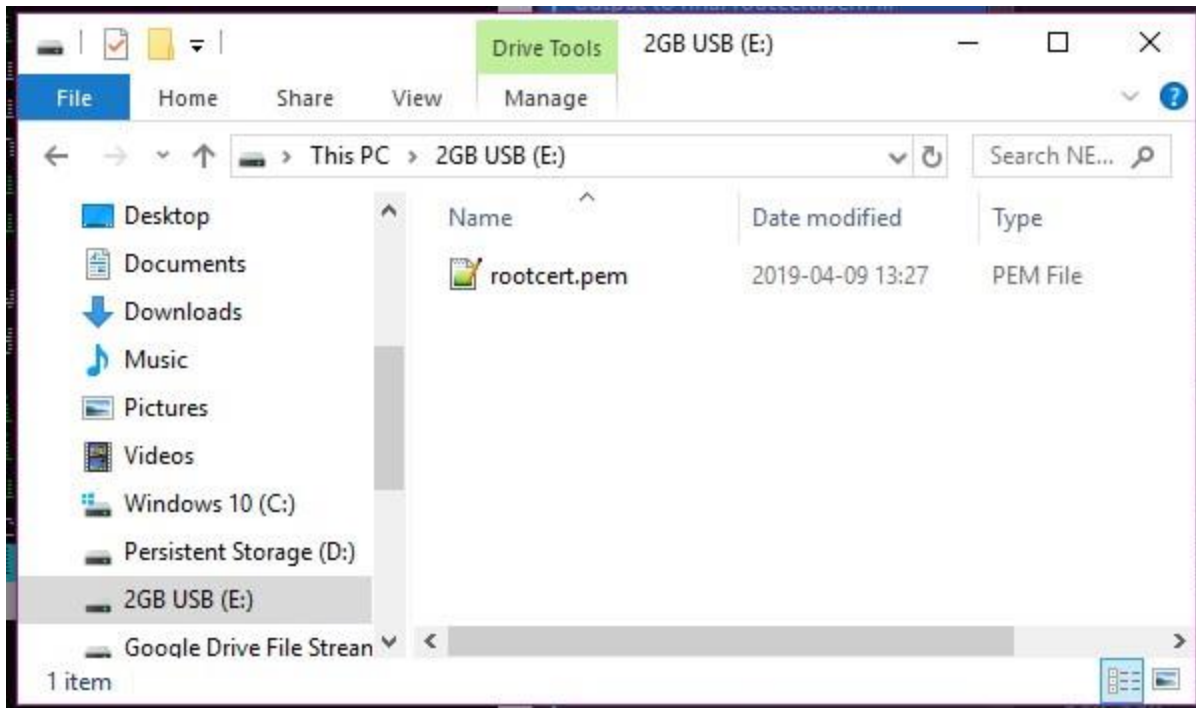
3. Installation of Root Certificate Files (rootcert.pem)

The **rootcert.pem** file is used to supplement the list of certificates already installed on your GenMega ATM. The supplemental certificates are trusted chains used by payment processors that are not always preinstalled on ATMs. These will allow validation to be enabled on the ATM for enhanced protection against logical attacks.

- a) Download the DPL [rootcert.pem](#) file (or the certificate chain indicated by your payment processor) and install it on a USB drive or SD card that is 2GB or less in size. It should appear as depicted below.

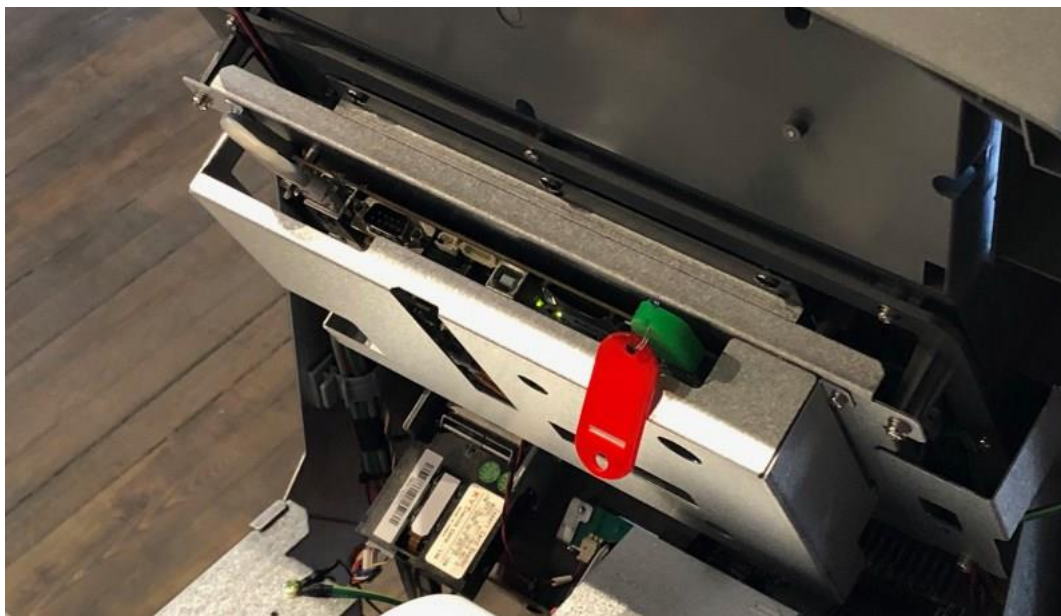
NOTE: The 2GB drive size is a requirement for GenMega ATMs. They can have trouble accessing drives larger than 2GB. **WARNING:** This is important. If you don't have one, purchase a 2GB drive.

Adding rootcert.pem to Root of USB Drive/SD Card



- b) Plug the USB drive (or SD card) into the appropriate port on your GenMega's control board (the green USB drive in our example). The GenMega G2500 ports are as seen below. USB is on the right when viewing the ATM from behind.

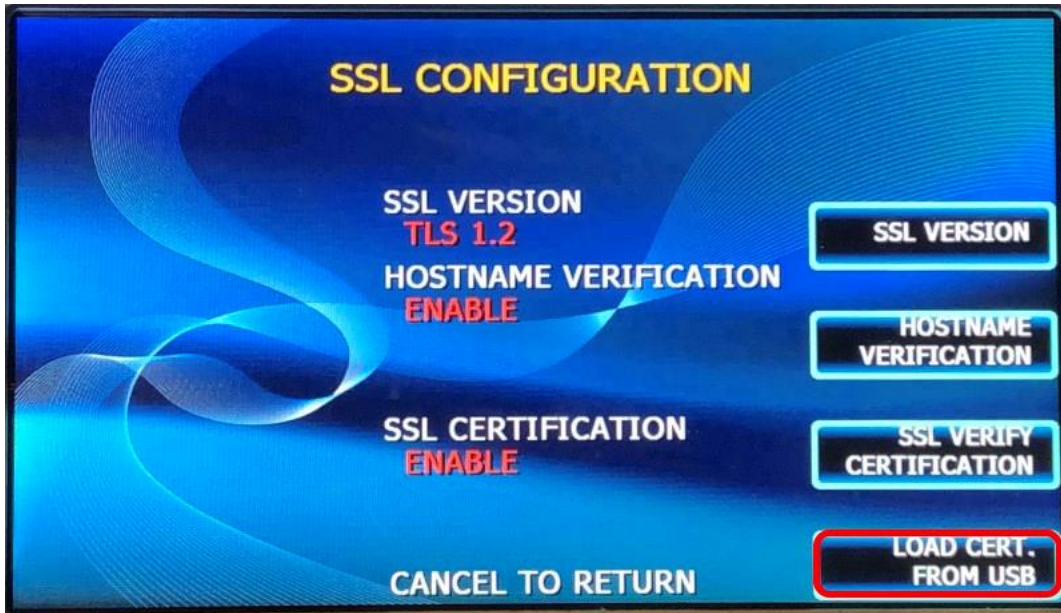
GenMega G2500 USB Port/SD Card Slot



- c) To install the new **rootcert.pem**, navigate to the SSL Configuration screen using the path listed below and press **Load Cert. From USB**.

NOTE: If you encounter an error at this stage, you either misnamed the **rootcert.pem** file or your USB drive or SD card is not 2GB or less and FAT formatted (see previous steps).

ATM Operator Menu > Customer Setup > Change Processor > SSL



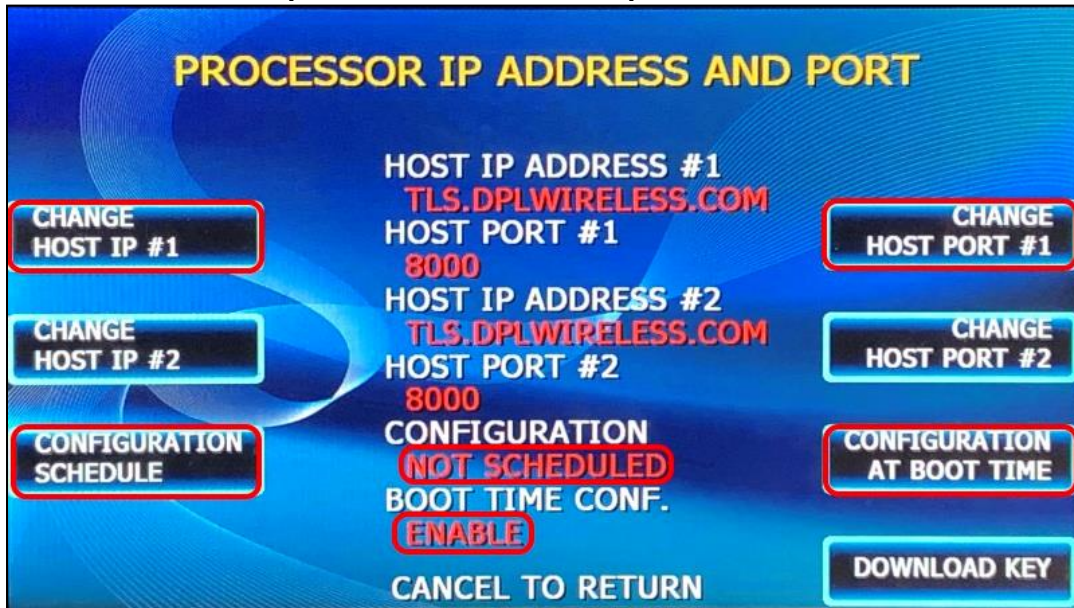
Once this is complete you should see an Operation Success displayed on screen.

4. SSL Host Configuration

In this section we will configure the host addresses for SSL/TLS. Configure the address fields to **tls.dplwireless.com** and the port fields to **8000**. DPL manages the connection from the Hercules modem through our secure network to your payment processor. Please contact our technical support department to configure the payment processor information for your Hercules modem or log in to the Hercules Portal to configure it yourself ([learn how](#)).

- a) Configure the information using the data from your processor or Hercules modem using the highlighted buttons.

ATM Operator Menu > Host Setup > Host IP Address



NOTE: For the Hercules set the **Configuration Schedule** to **Not Scheduled** and enable **Configuration At Boot Time**.

5. Testing SSL

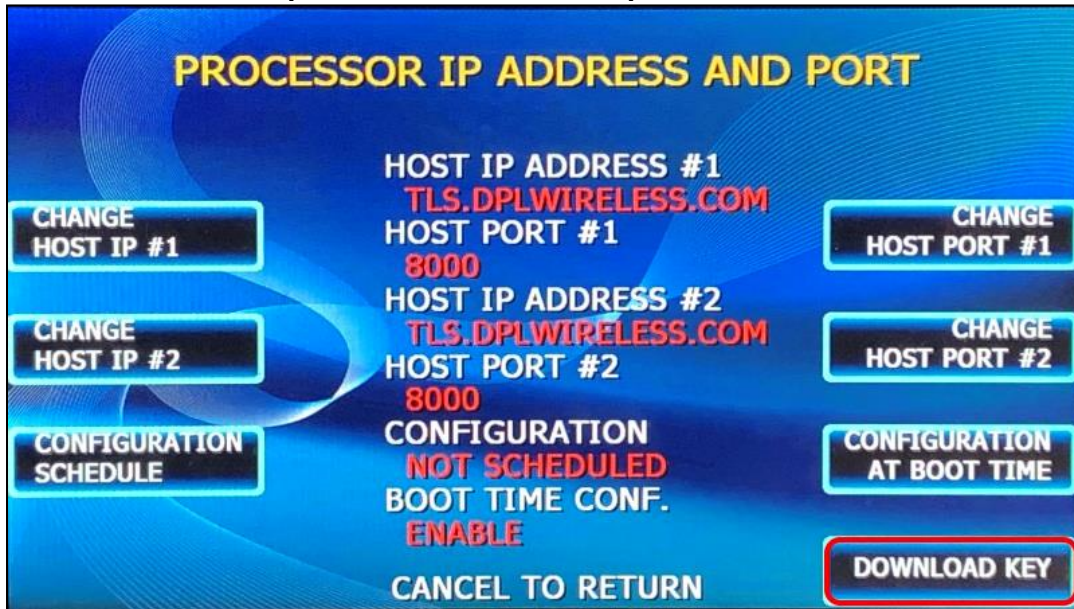
Test that SSL is configured properly on your ATM by completing either of the steps below:

1. Perform a dummy transaction on the ATM
2. Use the **Download Key** button on the **Host IP Address** screen to test the connection

For the purposes of this document the **Download Key** options will be demonstrated.

- a) Navigate to the **Host IP Address** screen using the path listed below and press the **Download Key** button. If everything is configured correctly a success message will be displayed.

ATM Operator Menu > Host Setup > Host IP Address



NOTE: If you encounter any issues use the **Reboot System** button on the **Set Reboot Time** screen as seen below to reboot the ATM to ensure the TCP/IP information has taken effect.

ATM Operator Menu > System Setup > Set Reboot > Reboot System



Once this is complete go back and attempt to test the SSL connection again. If there is a failure at this point, go back and double check all the configuration options from the previous steps.

Conclusion

After completing all the above steps your GenMega ATM will be set to use SSL (TLS 1.2) on all transactions with the payment processor. This ensures that no third parties can listen on the line, get any usable data, terminate the SSL connection and proxy it out (MITM attack), or commit any other nefarious logical attack against outgoing data from your ATMs.