

Digi Transport® WR11, WR21, and WR31 Telit Modem Firmware Update - Verizon

Update Guide

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Verizon network changes: Digi Transport WR11, WR21, and WR31

This document describes how to update cellular modem firmware to comply with Verizon network changes occurring on March 30th, 2019.

It applies to Digi TransPort routers containing one of these LTE modems:

- Telit LE910-NAv2 (single SKU, AT&T and Verizon)
- Telit LE910-NA1 (single SKU, AT&T and Verizon)

The affected and correct firmware versions are as follows:

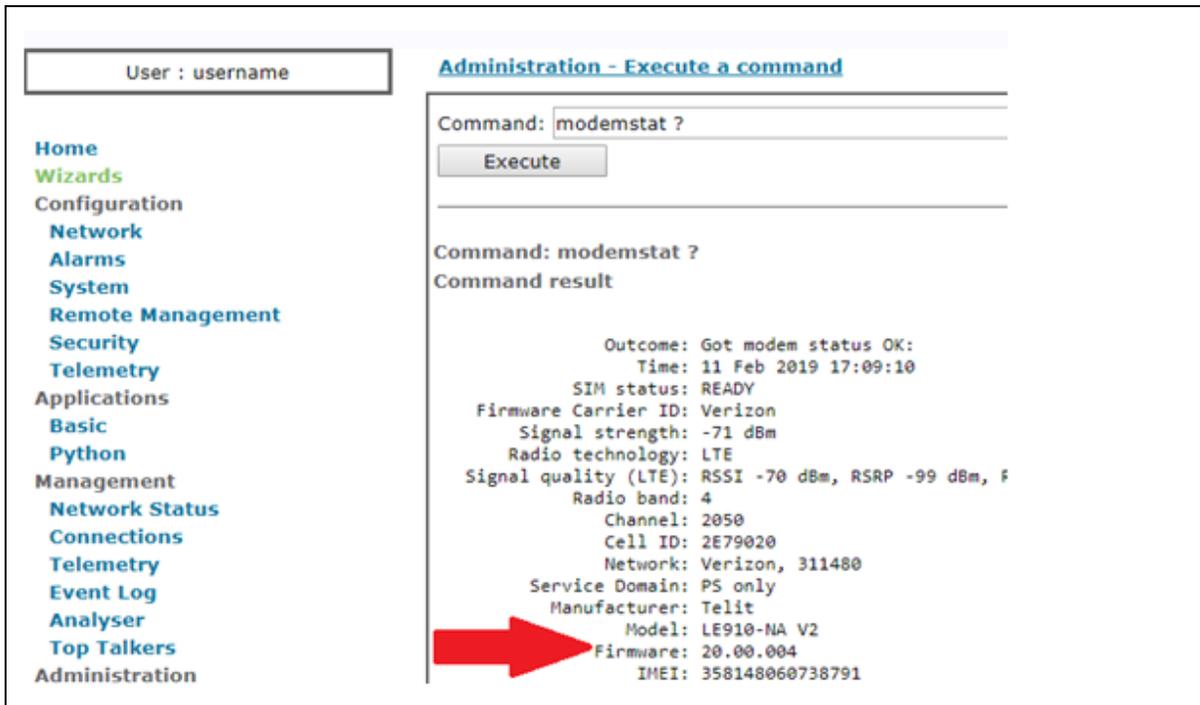
Device	SKU	Bad Modem Firmware	Good Modem Firmware
Digi TransPort WR11	WR11-M6xx-xxx-xx	20.00.014 / 20.00.524	20.00.015 / 20.00.525
Digi TransPort WR21	WR21-M5xx-xxx-xx	20.00.004 / 20.00.504	20.00.005 / 20.00.505
Digi TransPort WR31	WR31-M5xx-xxx-xx	20.00.004 / 20.00.504	20.00.005 / 20.00.505

Determine if an update is needed

Within the Web User Interface (WebUI), navigate to **Administration - Execute a command**, and issue the modem status command: ***modemstat ?***

Note All WebUI Administrative commands can be issued at the Command Line Interface (CLI) using SSH, Telnet, or serial.

Within the results, the modem firmware version will be listed next to "Firmware:". If this data shows 20.00.**4, then the modem needs to be updated. Refer to the image below as a reference:



The screenshot displays the WebUI interface for 'Administration - Execute a command'. The left sidebar contains a navigation menu with items like Home, Wizards, Configuration, Network, Alarms, System, Remote Management, Security, Telemetry, Applications, Basic, Python, Management, Network Status, Connections, Telemetry, Event Log, Analyser, Top Talkers, and Administration. The main content area shows the command 'modemstat ?' entered in a text box and the 'Execute' button. Below the command input, the output of the command is displayed, including the following details:

```
Command: modemstat ?
Command result
Outcome: Got modem status OK:
Time: 11 Feb 2019 17:09:10
SIM status: READY
Firmware Carrier ID: Verizon
Signal strength: -71 dBm
Radio technology: LTE
Signal quality (LTE): RSSI -70 dBm, RSRP -99 dBm, f
Radio band: 4
Channel: 2050
Cell ID: 2E79020
Network: Verizon, 311480
Service Domain: PS only
Manufacturer: Telit
Model: LE910-NA V2
Firmware: 20.00.004
IMEI: 358148060738791
```

A red arrow points to the 'Firmware: 20.00.004' line in the output.

Update the Modem Firmware

Prerequisites

The following is required to complete this update:

- SarOS device firmware must be running 6.1.3.8 or later, but strongly recommend 7.0.0.6 and thereafter
- 50MB of free storage required by the cellular modem firmware file. If storage is low, contact Tech support for guidance on freeing space on your router.

To determine how much space is available on our router:

1. Within the WebUI, navigate to **Administration - Execute a command**.
2. Issue the directory command: ***dir***

The last line shows the number of Flash Free bytes.

Best practices

When upgrading your cellular module, any momentary loss of power or event that causes the router or modem to reset can result in an unrecoverable router. The following should be considered when performing the update:

- Do not remove power during the modem firmware update process.
- Terminate any operation that may interfere with the modem firmware update process, including:
 - Python applications that programmatically control the cellular modem, for example to reset the modem, to do fail-over or to enable/disable the modem based on custom logic.
 - SureLink recovery mechanisms (i.e., link_retries, check_reg, rebootfails) or dual SIM failover features.
 - Router recovery mechanisms, like the cloud watchdog feature (cloud 0 watchdog).

Where to find the updated modem firmware

You can find the updated modem firmware by using the Public Support site method of upgrading firmware, which means you have direct access to **ftp1.digi.com**.

If you are not using the Public Support site method, the updated modem firmware can be found in the locations specified below:

Modem: M6 (LE910- NA1)**Size:** 4866 0348**all.bin MD5 checksum:** 322C4F0A12C107D72C82114927600599**Location:** http://ftp1.digi.com/support/firmware/transport/LE910NA1_carrier_firmware/all.bin**Modem: M5 (LE910 NA-V2)****Size:** 4866 2956**all.bin MD5 checksum:** 38B4470F298A7A8EE1698FD21FB8C781**Location:** http://ftp1.digi.com/support/firmware/transport/LE910NA_V2_carrier_firmware/all.bin

If your router has access to the Digi public support site (ftp1.digi.com), the update can be done using a single command.

You can test whether you have access to the Digi Public Support site.

1. Within the WebUI, navigate to **Administration - Execute a command**.
2. Initiate the ping command: **ping ftp1.digi.com**
3. If you can resolve and connect to **ftp1.digi.com**, the ping command will return immediately and show 100 % success.

If you do not have access to the support site, then two steps are required: placing the correct modem firmware on to the router and then initiating the firmware update.

Updating the modem firmware on your router

There are three methods shown below that can be used to download modem firmware and update your router:

- [Method 1: Update the modem firmware using Digi Remote Manager](#)
- [Method 2: Update the modem firmware using your WAN connection](#)
- [Method 3: Update the modem firmware using a local LAN connection](#)

After you have updated the modem firmware, [verify that the update was successful](#).

Note Downloading the firmware over a cellular connection ([method 1](#) and [method 2](#)) will result in roughly 50 MB of data use on your cellular data plan.

Method 1: Update the modem firmware using Digi Remote Manager

Step 1: Download the updated modem firmware

If you have access to Digi's public support site

For a single device

1. Within Digi Remote Manager, navigate to **Device Management > Devices**.
2. Double-click on the desired device to open the **Properties** screen.
3. In the **Properties** screen, click **Administration > Execute a command**, and initiate the download process using the command: *carrier all -ftp*

For multiple devices

1. Within Digi Remote Manager, navigate to **Device Management > Schedules**.
2. Click **New Schedule**.
3. Click **Command Line Interface**, and type the command: *carrier all -ftp*
4. De-select the **Allow Offline** option.

Use the image below as a reference:

The screenshot shows the 'New Schedule' configuration interface. On the left, a 'Device' dropdown menu is open, showing options like Xbee, SMS, Satellite, SM/UDP, My Tasks, and Public Tasks. The 'Xbee' option is selected. Below this, a list of actions is visible, including Reboot, Gateway Firmware Update, RCI Command, Upload Python Files, Upload Files, Retrieve Files, Delete Files, List Files, Disconnect, and Import Configuration. On the right, the 'Description' field contains the text 'Run the carrier command on WR21s (M5)'. Below that, the 'Commands' section is titled 'Command Line Interface' and contains a text input field with the command 'carrier all -ftp'. At the bottom of this section, there are three controls: 'On Error: End Task' (a dropdown menu), 'On End:' (a dropdown menu), and an unchecked 'Allow Offline' checkbox.

Note The task can also be saved using the **Save As** option at the bottom. This allows the task to be run again without having to build the task each time.

5. Enter a description in the **Description** field.
6. Click **Schedule >>**.
7. On the scheduler page, choose the **Devices, Tags, or Groups** to run the task against

Note The TransPort devices must all be of the same type when using this method (e.g. – All devices must be WR21s). If the devices are not of the same type and the task is run on them, it is likely the Digi device will become inoperable after the task completes.

8. Click **Run Now** to start the process for the selected devices.

If you do not have access to Digi's public support site

1. Within Digi Remote Manager, navigate to **Device Management > Devices**.
2. Double-click on the desired device to open the **Properties** screen.
3. In **Properties** screen, click **Administration > File Management** and then click **Upload** to place the all.bin file on to the router.
4. Navigate to **Administration > Execute a command**, and verify the file size matches using the command: `dir *.bin`
5. Use **Execute a command** to initiate the download process using the command: `carrier all`

Step 2: Download begins

If your Remote Manager WAN connection is through cellular (PPP 1), you will lose connectivity to the router for 5-10 minutes while the firmware gets written to the modem. The modem will reconnect when complete.

Note When using Remote Manager for the update, keep the cloud watchdog active. The default Remote Manager Watchdog will not reset the router unless the router is disconnected for 45 minutes. See [Best Practices](#) for issues when upgrading cellular modem firmware.

Step 3: Verify that the update was successful

1. In the Remote Manager, click on the **Device Management** tab.
2. Double-click on the target device to display the device properties.
3. Click **Refresh** at the bottom of the **Device** page.
4. Click **Execute a command**.
5. Type in the modem status command: `modemstat ?`
6. Validate the output shows the updated firmware version. An example is listed below.

The screenshot shows a web interface with a sidebar on the left containing navigation options: Home, Summary Dashboard, File Management, Execute a command (highlighted), and Connection History. The main content area is titled 'Execute a command' and displays the output of the 'modemstat ?' command. The output includes various modem parameters such as Time, SIM status, Carrier ID, Signal strength, Radio technology, Signal quality, Radio band, Channel, Cell ID, Network, Service Domain, Manufacturer, Model, Firmware, IMEI, IMSI, ICCID, Phone number, Preferred system, APN in use, GPRS Attachment Status, GPRS Registration, Network Technology, Connection Status, and Temperature. A red arrow points to the 'Firmware: 20.00.005' line.

```

modemstat ?
Outcome: Got modem status OK:
Time: 12 Feb 2019 22:13:59
SIM status: READY
Firmware Carrier ID: Verizon
Signal strength: -69 dBm
Radio technology: LTE
Signal quality (LTE): RSSI -69 dBm, RSRP -104 dBm, RSRQ -13.0 dB
Radio band: 4
Channel: 2050
Cell ID: 2E79020
Network: Verizon Wireless, 311480
Service Domain: PS only
Manufacturer: Telit
Model: LE910-NA V2
Firmware: 20.00.005
IMEI:
IMSI:
ICCID:
Phone number:
Preferred system: LTE
APN in use: Context 3 :
GPRS Attachment Status: Attached
GPRS Registration: Registered, home network
Network Technology: LTE
Connection Status: Normal, unspecified
Temperature: 44C
OK
#>

```

Method 2: Update the modem firmware using your WAN connection

Step 1: Download the updated modem firmware

If you have access to Digi's public support site

1. In the WebUI, navigate to **Administration - Execute a command**.
2. Initiate the download process using command: ***carrier all -ftp***

If you do not have access to Digi's public support site

1. Using an FTP program, such as FileZilla, place the **all.bin** file on the root (/) directory of the router.
2. Within the WebUI, navigate to **Administration - Execute a command**, and verify the file size matches using the command: ***dir *.bin***
3. While on the same **Execute a command page**, initiate the download process using the command: ***carrier all***

Note See [Best Practices](#) for information about common issues when upgrading cellular modem firmware.

Step 2: Download begins

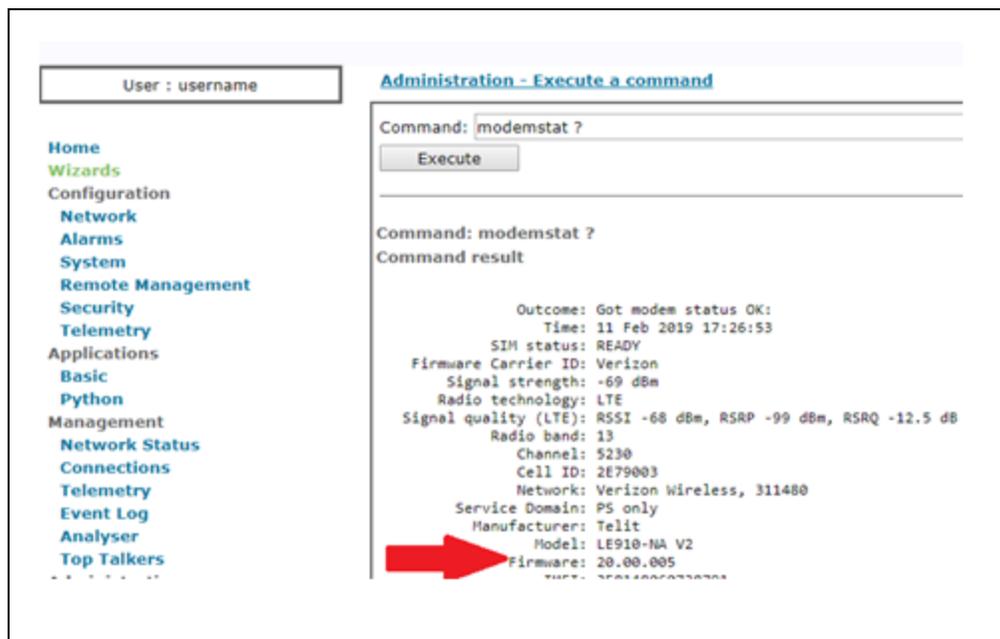
If your Web UI WAN connection is through cellular (PPP 1), you will lose connectivity to the router for 5-10 minutes while the firmware gets written to the modem. The modem will reconnect when complete.

Step 3: Verify that the update was successful

After the upgrade process completes, wait 10 minutes. and re-issue the modem status command: **modemstat ?**

This command can be executed in the WebUI under **Administration - Execute a command**, or at the CLI via Telnet, SSH, or the serial port.

The updated modem firmware version listed in the **Firmware** field should be **20.00.**5**. An example of this is shown below:



Method 3: Update the modem firmware using a local LAN connection

Step 1: Download the updated modem firmware

If you have access to Digi's public support site

1. In the WebUI, navigate to **Administration - Execute a command**.
2. Initiate the download process using command: **carrier all -ftp**

If you do not have access to Digi's public support site

1. Using an FTP program, such as FileZilla, place the **all.bin** file on the root (/) directory of the router.

2. Within the WebUI, navigate to **Administration - Execute a command**, and verify the file size matches using the command: *dir *.bin*
3. While on the same **Execute a command page**, initiate the download process using the command: *carrier all*

Note See [Best Practices](#) for information about avoiding events that could prematurely reset your router.

Step 2: Download begins

Once the entire all.bin file is on the router, the modem will reset to write the image. The cellular connection will be lost for approximately 5-10 minutes while the firmware gets written to the modem.

Step 3: Verify that the update was successful

After the upgrade process completes, wait 10 minutes. and re-issue the modem status command: *modemstat ?*

This command can be executed in the WebUI under **Administration - Execute a command**, or at the CLI via Telnet, SSH, or the serial port.

The updated modem firmware version listed in the **Firmware** field should be **20.00.**5**. An example of this is shown below:

