FLASH TECHNOLOGY®

F7904504

Technical Bulletin

Vanguard® SC 370 Setup for Modem and SNMP Monitoring

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The Vanguard® SC 370 controller is designed to be monitored by Flash Technology and other 3rd party NOC's. Instructions to configure the modem for 3rd party SNMP monitoring are presented below.

These instructions are intended for the use of 3rd parties who are already familiar with SNMP type monitoring and have the systems needed to support it. Flash Technology is not able to provide training or systems support beyond the setup and operation of their equipment.

1. Configuring Modem for custom SIM card

The SIM card used in the LTE Multitech modem must be configured to connect to the correct access point name (APN) on the appropriate network. This is achieved in one of two ways.

1.1 Manual modem configuration of SIM card settings.
   User sets up modem and configures SIM card settings. With this process, the Vanguard SC 370 controller will not communicate with the modem to fetch signal strength or IP address. Port-forwarding modifications are permitted.

1.2 Customized SIM card option using the Vanguard System webpage
   User needs the APN for the SIM card in use. The Vanguard SC 370 controller communicates with the modem and configures SIM card APN to provide signal strength and IP address data through SNMP GET commands. However, port-forwarding changes are not permitted. Vanguard IP address needs to be configured to 192.168.1.11 which is a default configuration.

1.1 Manual modem configuration of SIM card settings:

1.1.1   Connect the SC 370 controller and modem as shown in the Product Manual/Info Card in the box.

1.1.2   If a SIM card has already been installed and needs to be replaced, use the following procedure:

1.1.2.1 Push down on the SIM card and release so the spring clamp can release it.

1.1.2.2 Insert the new SIM and push in until it locks into place.

1.1.3   Ensure that the antenna is connected to the port marked "Cell" and not to the port marked "Aux".

1.1.4   Power up the modem.

1.1.5   Configure the computer/laptop to a static IP address, for example 192.168.1.100.

   1.1.5.1 The default modem IP address for the SC 370 controller is 192.168.1.10.

1.1.6   Connect the Ethernet cable (straight) from Modem to computer.

1.1.7   Open a command prompt on the laptop and perform a ping to ensure a connection to the modem.

1.1.8   Confirm ability to login to the modem by opening a web browser and typing in the address http://192.168.1.10

1.1.9   Modem login page appears as below. Enter "admin" for both username and password.

1.1.10   The home page of the modem appears as below. If a setup wizard appears, then exit out of it.

1.1.11   Note that the Cellular IP address field (highlighted in the picture below) displays the message "Not Acquired".

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1.1.12 Select the "Cellular" button on the left side of the menu by clicking on it as indicated.

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1.1.13 Select the "Cellular Configuration" option to reach the page displayed below.

1.1.14 Enter the APN provided by your cellular carrier in the field highlighted by the red arrow in the picture above and submit it by clicking on the "Submit" button.
NOTE: For Verizon customers, APN's are managed by Verizon dynamically Over the Air (OTA). If you have a Verizon modem and do not see an APN field, you can skip this step.

1.1.15 Update the settings as shown below and click on the "Save and Restart" button.

1.1.16   When modem rebooting is complete, login again.
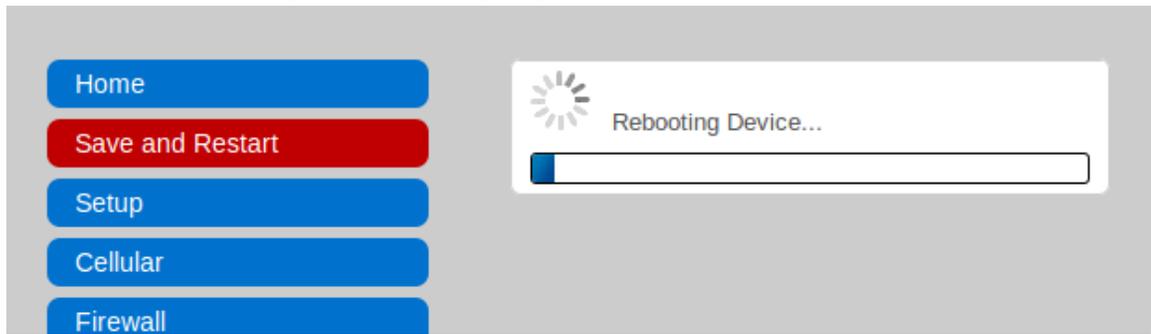
1.1.17   Verify that the Cellular IP address has been acquired by checking the "IPv4 Address" field (highlighted in the picture below). If the IP address does not appear or if the cellular state does not change to "PPP linkup", then go back and verify that the modem has accepted the APN.
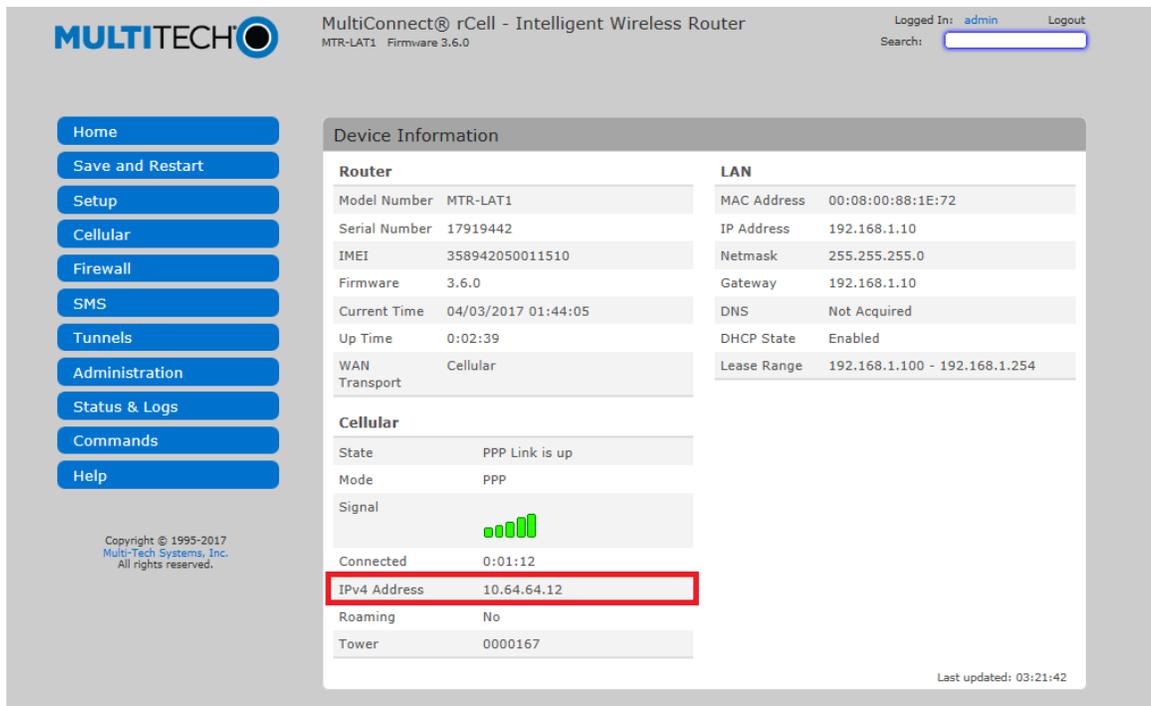
1.1.18   To set up port-forwarding for your network click on the "Firewall" and the "Settings" options as highlighted below.

1.1.18.1   Add or edit the rules for the specific need.

1.1.18.2   Default port-forwarding settings for SNMP monitoring ports are 161, 162, FTP, SSH and webpage access port 80 to 8080.
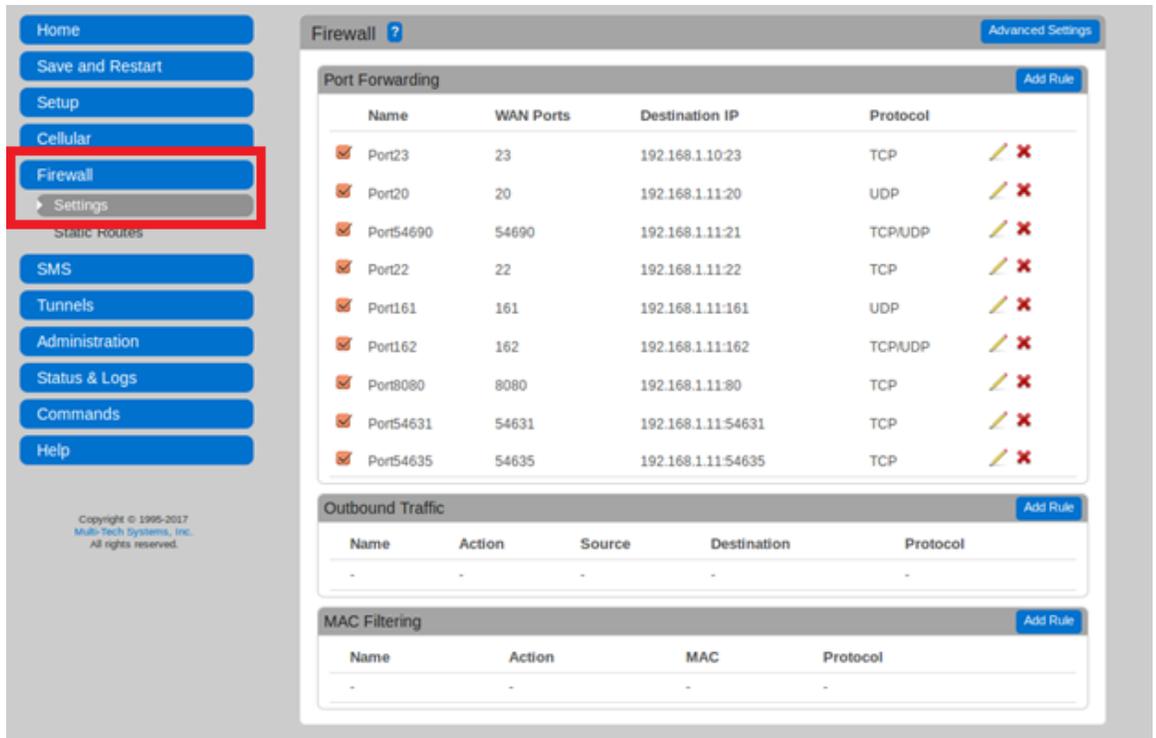
1.1.19 If the Vanguard LAN IP address is changed, then the port-forwarding table shown above must be modified to update the LAN IP address.

1.1.20 To configure multiple modems, save the modem configuration to a file, then upload the configuration file to the other modems in a single step as shown below.

1.1.21 Click on the highlighted "Save" button to save the file.

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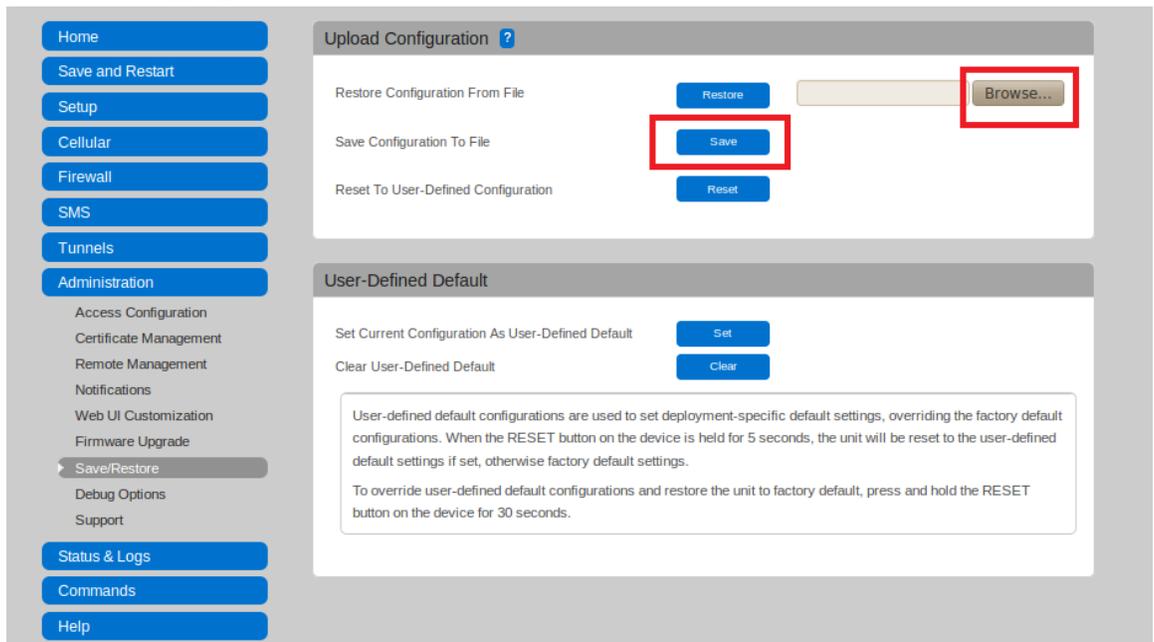
1.1.22 For the next modem, select the "Browse" button (highlighted in the picture above) and upload the configuration file that was previously saved by clicking on the "Restore" button.
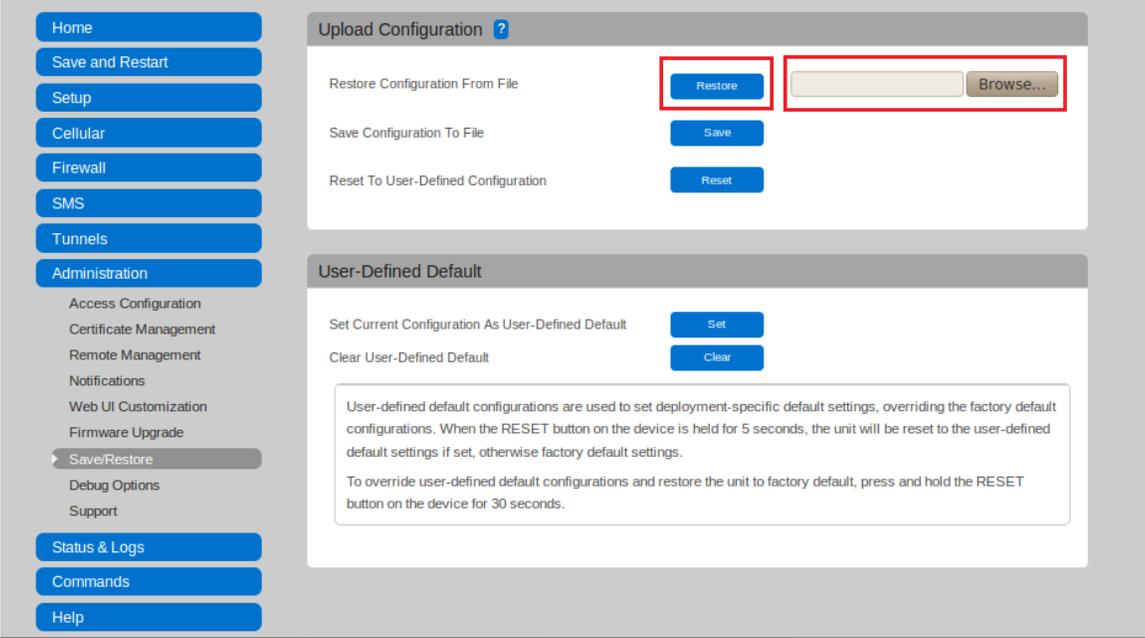
1.1.22.1 If SIM cards are from multiple carriers, configurations will have to be maintained independently for each carrier.

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1.1.23   Click on the popup and allow the modem to reboot.
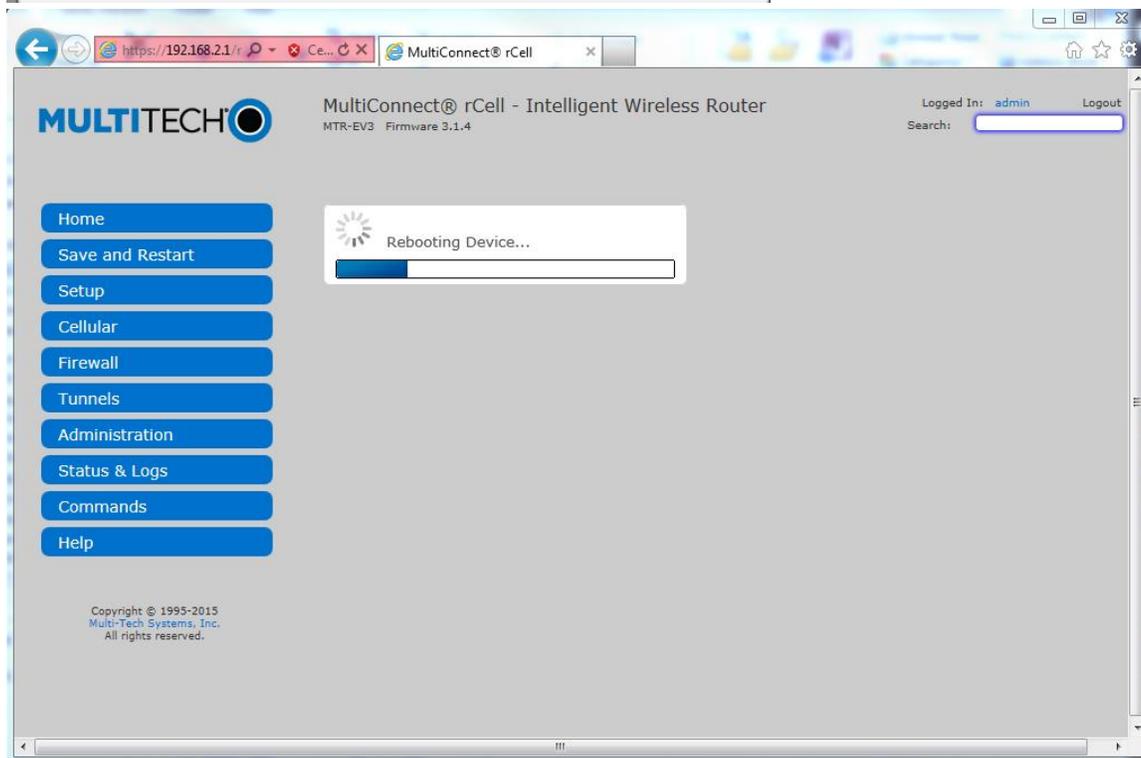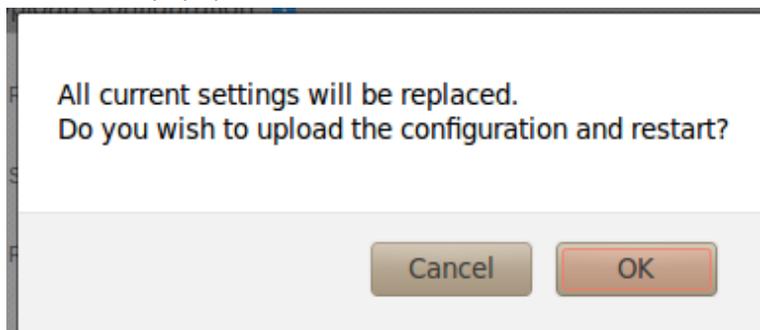
1.1.24   After the modem reboots itself (may take a few minutes), type
https://192.168.1.10/login.html into the browser address bar and enter.

1.1.24.1   If the modem does not return to the login page, try refreshing the webpage.

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1.1.25   When logged in, click on the "Administration" tab on the left side of the screen, then on the "Save/Restore link" and finally on the "Set" button under User-Defined Default section.
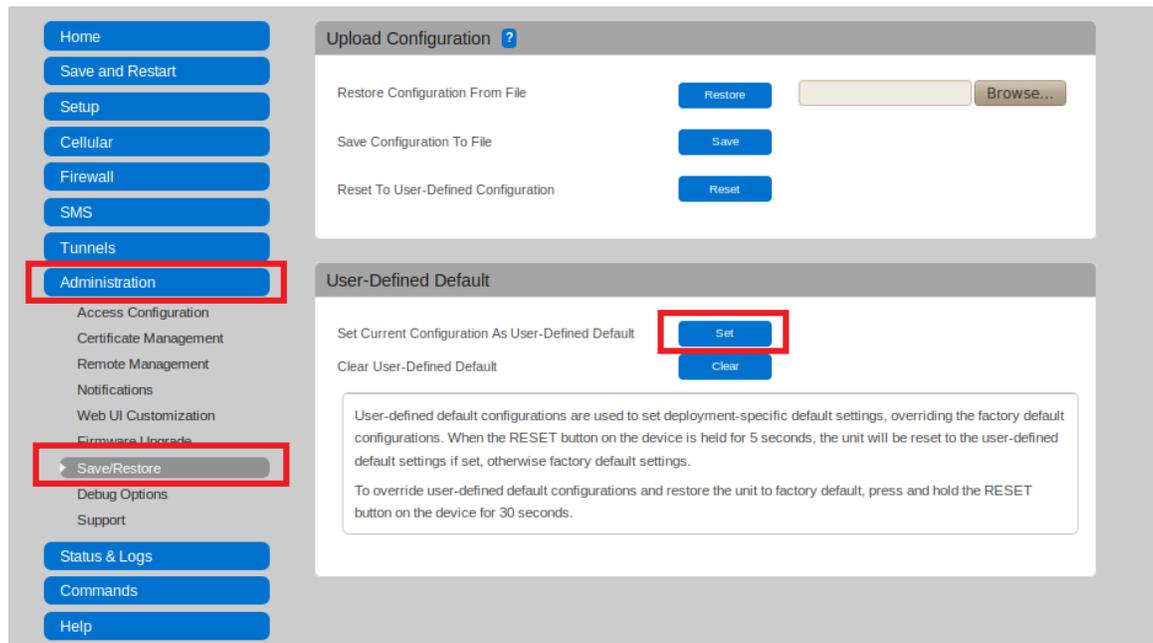
Click on OK button in the popup window.

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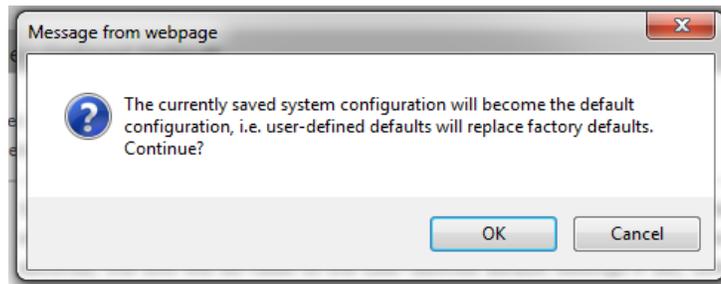
1.1.26 Click on the "Save and Restart" button to save user defaults.
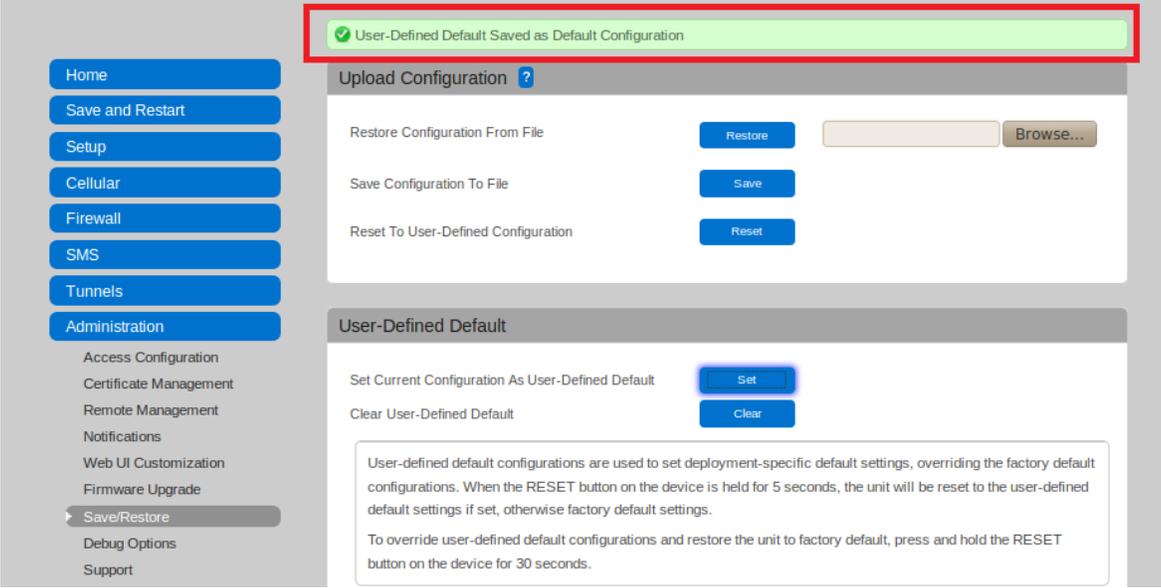
1.1.27 The modem is ready for monitoring. Reconnect the Ethernet cable from the modem to the SC 370 controller.

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1.2 Customized SIM card option using the Vanguard webpage

1.2.1   Connect the SC 370 controller to the computer using straight Ethernet/CAT5 cable. Make sure to configure computer to static IP address 192.168.1.100.

1.2.1.1 Default IP address for Vanguard SC 370 is 192.168.1.11.

1.2.2   Confirm the connectivity to SC 370 by opening the browser and typing the address http://192.168.1.11

1.2.3   The Vanguard System webpage appears as below irrespective of the modem type.

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Product Manual

Site Name: Not Set

Site ID: Not Set

For Support: 1-800-821-5825

Tower Lighting Status

Description	Value
Controller	FTS 370d
Tower Lighting Type	Dual
Total Beacons	1
Total Marker Tiers	1
Total Alarms	🟢 0
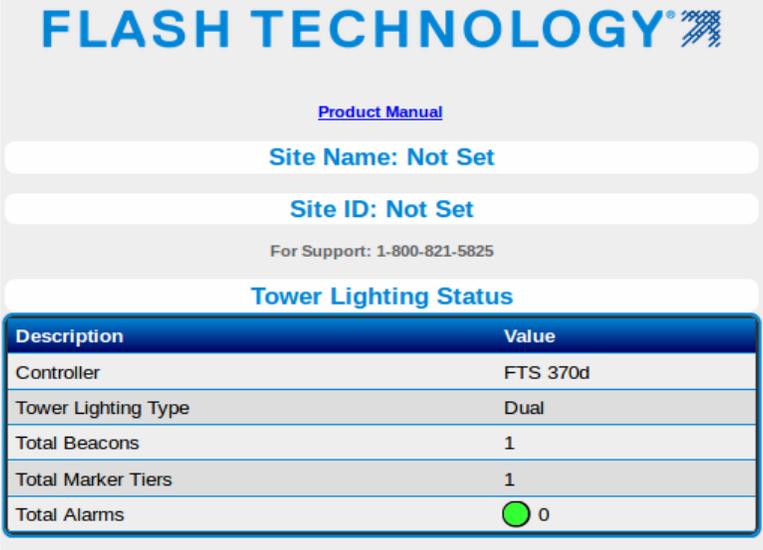
1.2.4   Click on the "Configuration" button and then "Cellular Modem" to configure for customized SIM card with APN as shown below.

Event History

Event Log

Vanguard System Diagnostics

Diagnostics

Download Log File

Download Log File

Configuration

Configuration

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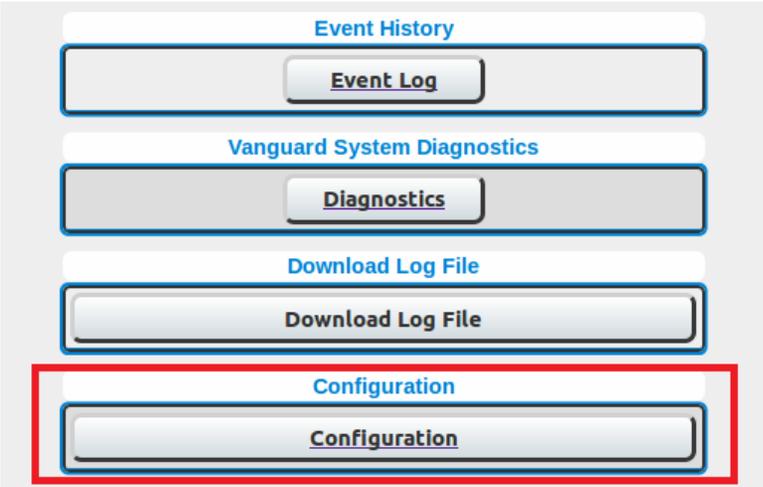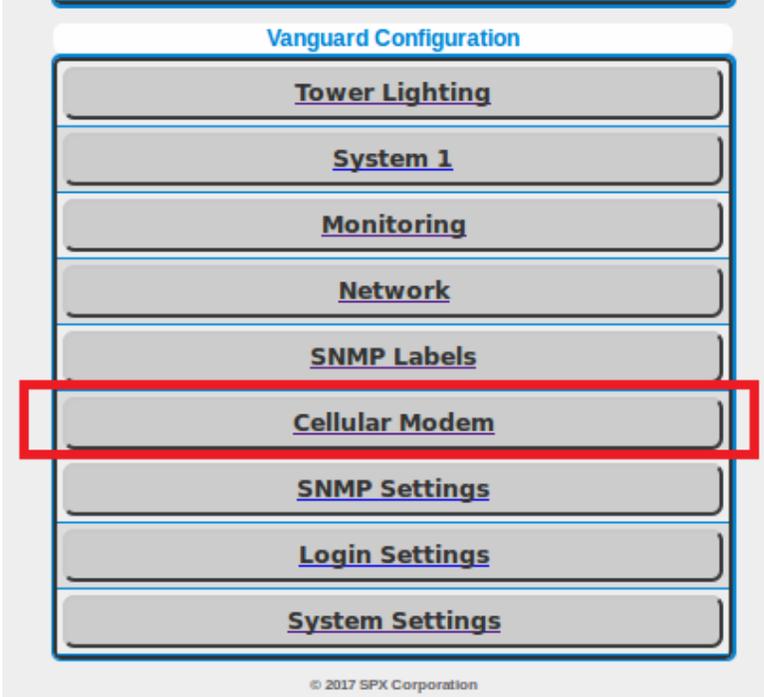
1.2.5 Click on the "Configuration" menu and select "Customized" from the drop down options.
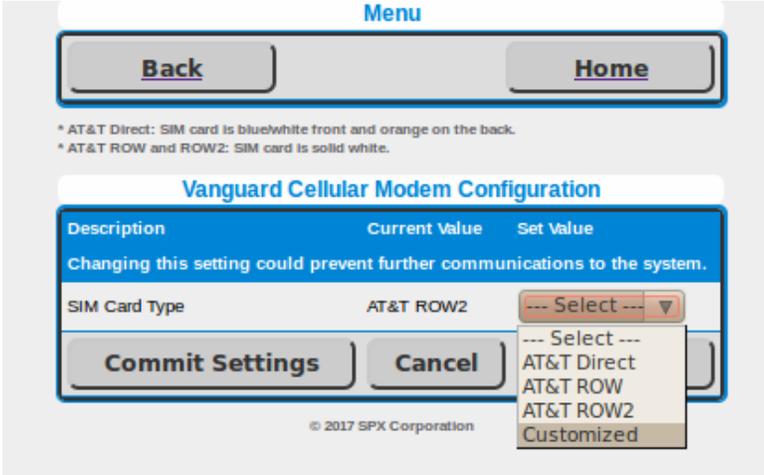
1.2.6 Follow the messages on the webpage to configure the customized APN provided by the SIM card network carrier.

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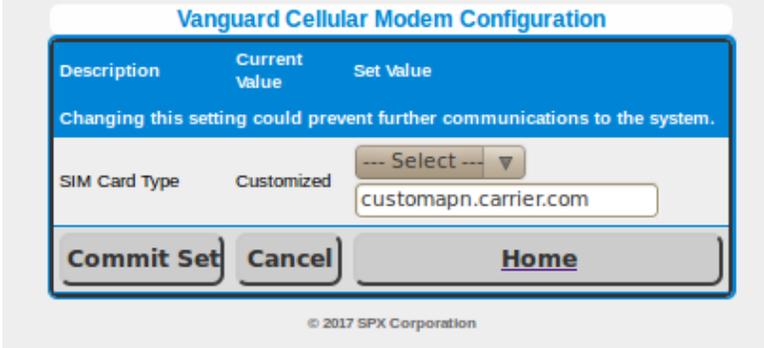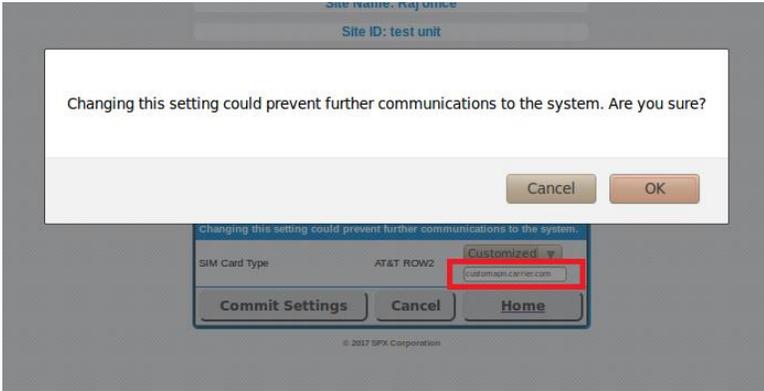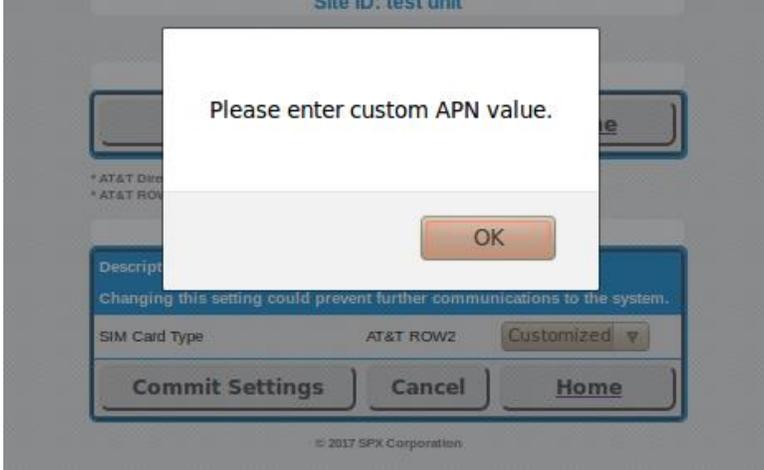
1.2.7   In this instance the default port-forwarding table is fixed and is not editable. User modifications will periodically be overwritten by the firmware.

	Firewall ❓				Advanced Settings

Home
Save and Restart
Setup
Cellular
Firewall
> **Settings**
Static Routes
SMS
Tunnels
Administration
Status & Logs
Commands
Help

Port Forwarding — Add Rule

	Name	WAN Ports	Destination IP	Protocol	
☑	Port23	23	192.168.1.10:23	TCP	✎ ✖
☑	Port20	20	192.168.1.11:20	UDP	✎ ✖
☑	Port54690	54690	192.168.1.11:21	TCP/UDP	✎ ✖
☑	Port22	22	192.168.1.11:22	TCP	✎ ✖
☑	Port161	161	192.168.1.11:161	UDP	✎ ✖
☑	Port162	162	192.168.1.11:162	TCP/UDP	✎ ✖
☑	Port8080	8080	192.168.1.11:80	TCP	✎ ✖
☑	Port54631	54631	192.168.1.11:54631	TCP	✎ ✖
☑	Port54635	54635	192.168.1.11:54635	TCP	✎ ✖

Outbound Traffic — Add Rule

Name	Action	Source	Destination	Protocol
-	-	-	-	-

MAC Filtering — Add Rule

Name	Action	MAC	Protocol
-	-	-	-

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2. Configuring Vanguard SC 370 for SNMP Monitoring:

2.1 Connect the Vanguard controller to a computer using a straight Ethernet/CAT5 cable.

2.1.1   Default IP address for SC 370 is 192.168.1.11

2.2 Confirm the connectivity to the controller by opening the browser and typing the address
http://192.168.1.11

2.3 To address the webpage over WAN, use address http://WANIPADDRESS:8080

2.4 The Vanguard System webpage appears as below, irrespective of modem type.

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Product Manual

Site Name: Not Set

Site ID: Not Set

For Support: 1-800-821-5825

Tower Lighting Status

Description	Value
Controller	FTS 370d
Tower Lighting Type	Dual
Total Beacons	1
Total Marker Tiers	1
Total Alarms	🟢 0
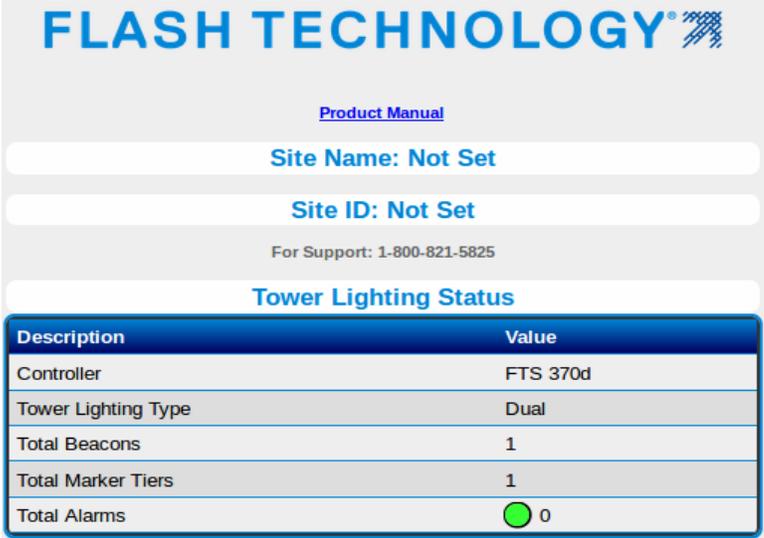
2.5 Click on the "Configuration" button on the webpage and then "Monitoring" to configure for Ethernet SNMP monitoring as below.
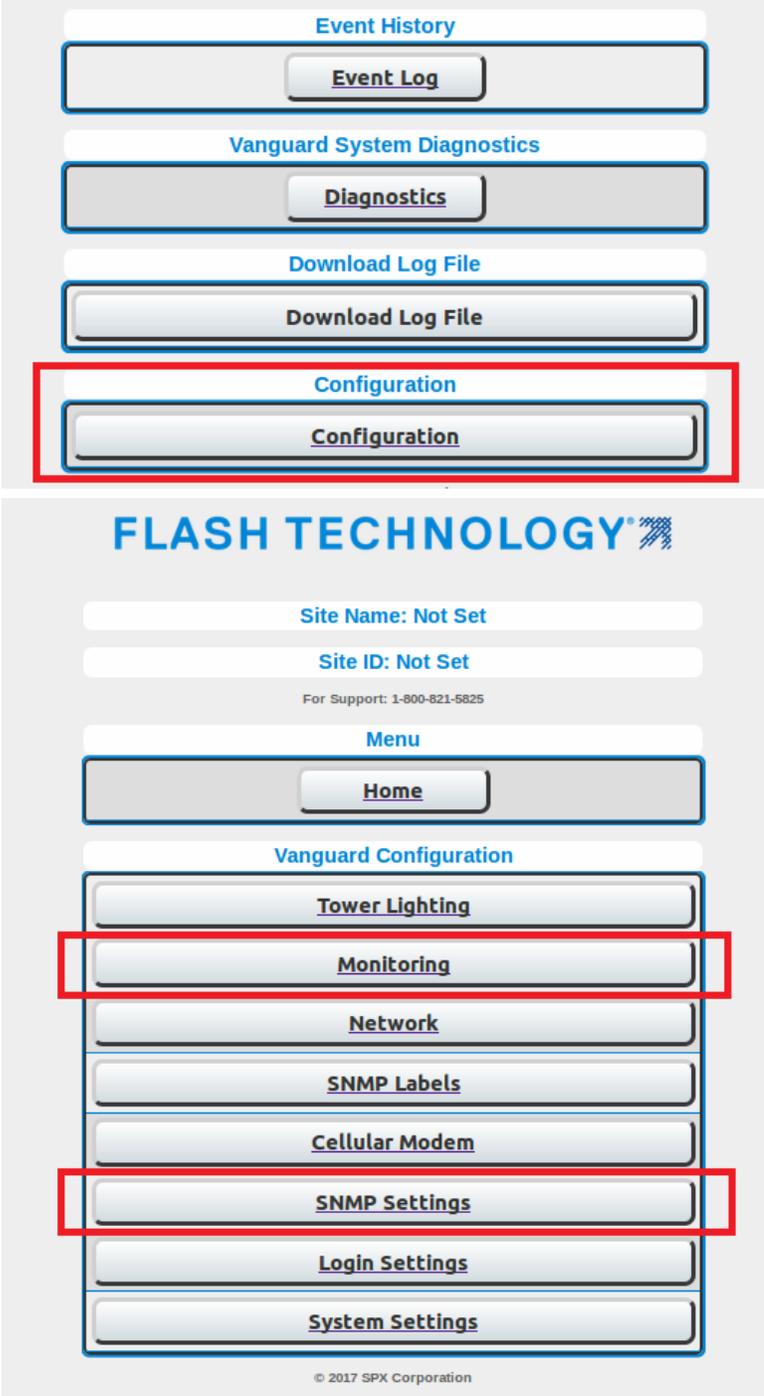
2.6 By default, "Primary Monitoring Configuration" will be disabled. Set the Monitoring method to "SNMP Settings" and click on "Commit Settings".

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2.7 Configure Primary IP address, Alternate IP address and port numbers as per the SNMP NMS server settings. By default, the port number for reporting traps is 162, and 161 for GET/SET commands.

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Site Name: Not Set

Site ID: Not Set

For Support: 1-800-821-5825

Menu

Back	Home

Primary Monitoring Configuration

Description	Current Value	Set Value
Monitoring Method	Ethernet SNMP	--- Select ---
Primary IP Addr		192.168.1.123
Primary Port		162
Alternate IP Addr		192.168.1.124
Alternate Port		162
Listen Port		161
Automatic Update Interval	11 Hour(s)	--- Select ---

Alternate Monitoring Configuration

Description	Current Value	Set Value
Monitoring Method	RS485 Modbus	--- Select ---
Baud Rate	9600	
Station Address	2	
Automatic Update Interval	Disabled	

Commit Settings	Cancel	Home

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2.8 For initial testing, set the Primary IP address to 192.168.1.100 and click on submit.

2.9 The Vanguard SC 370 controller is now set for SNMP monitoring with community string "public" for GETs/SETs.

2.10 To configure SNMP V2C/V3 settings, change the configuration in System Settings and SNMP settings. Refer to the product manual available on the Vanguard homepage, or download from the Flash Technology website
https://www.flashtechnology.com/knowledge-base/
SNMP Settings: F7904503-Technical-Bulletin-SC370-SNMP-Trap-Interface-Rev1.pdf
Product Manual: 7913702-FTS-370d_w_r-Catenary

2.11 SNMP MIBs are available at the web link below. Always refer to the MIBs associated with the latest firmware version
https://www.flashtechnology.com/knowledgebase/vanguard-software/

2.12 For a Linux machine, run the "tcpdump" command with port settings 162. You will see SNMP traps by flipping the manual mode switch on the Vanguard controller

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Command example: tcpdump -i eth0 (Ethernet interface) port 162

2.13 For a Windows® machine, try any available MIB browser to view the traps or to perform WALK/GET. You can also use any network protocol analyzer or Windows packet capture utility filtering on port 162. The firewall settings may need to be updated to allow UDP traffic.

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