



Setting Cellular Wireless Parameters in the EN-2000

SIM Management, APN, and Others

The EN-2000 provides wireless and cabled connections to a local area network (LAN), to a wide area network (WAN), and to peripheral devices and remote devices.

A mobile device must have an access point name (APN) so that carriers of GSM, GPRS, 3G, and 4G LTE networks can identify the device and its connection protocols. Before setting the APN, you may wish to consult the document [Configuring the EN-2000 for its Network Functions](#).

To review the radiofrequency channels available in your EN-2000, see the following:

- [Section 5.1, Radiofrequency Channels in the EN-2000](#), on page 1

APN configuration is part of common configuration for a cellular wireless interface. See one of the following:

- [Section 5.2, APN Configuration in the USA and North America](#), on page 4
- [Section 5.3, APN Configuration in the UK and Europe](#), on page 6

After you have configured the APN setting and other values in the General Setup tab for the EN-2000's Common Configuration, see the following sections for further configuration:

- [Section 5.4, Advanced Settings](#), on page 12
- [Section 5.5, Physical Settings](#), on page 13
- [Section 5.6, SIM Management](#), on page 14

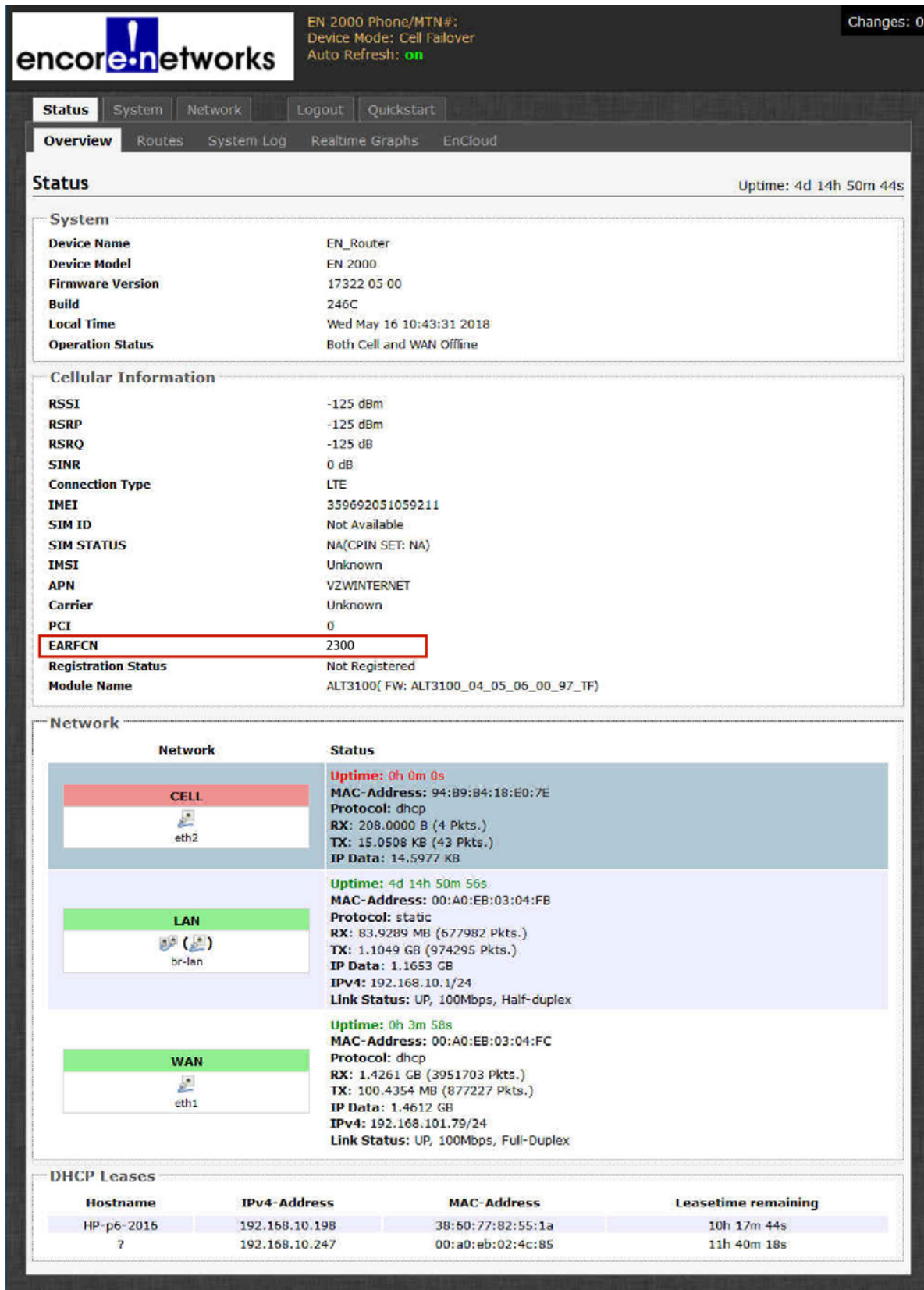
5.1 Radiofrequency Channels in the EN-2000

- 1 Log into the EN-2000 management system. (For details, see [Logging In](#), in the document [Using the EN-2000's Management System](#).)

- ❖ The EN-2000 Status Overview Screen ([Figure 5-1](#)) is the first screen displayed after you have logged onto the EN-2000 management system.

The status overview includes summaries of the LAN, WAN, cellular wireless ports, and 802.11 wireless (WiFi) ports.




Figure 5-1. EN-2000 Status Overview Screen



The screenshot displays the EN-2000 Status Overview Screen. At the top left is the Encore Networks logo. To its right, status information is shown: 'EN 2000 Phone/MTN#:', 'Device Mode: Cell Failover', and 'Auto Refresh: on'. A 'Changes: 0' indicator is in the top right corner. Below the logo is a navigation bar with tabs: 'Status' (selected), 'System', 'Network', 'Logout', and 'Quickstart'. Under the 'Status' tab, there are sub-tabs: 'Overview' (selected), 'Routes', 'System Log', 'Realtime Graphs', and 'EnCloud'.

The main content area is titled 'Status' and shows 'Uptime: 4d 14h 50m 44s'. It is divided into three sections:

- System:**
 - Device Name: EN_Router
 - Device Model: EN 2000
 - Firmware Version: 17322 05 00
 - Build: 246C
 - Local Time: Wed May 16 10:43:31 2018
 - Operation Status: Both Cell and WAN Offline
- Cellular Information:**
 - RSSI: -125 dBm
 - RSRP: -125 dBm
 - RSRQ: -125 dB
 - SINR: 0 dB
 - Connection Type: LTE
 - IMEI: 359692051059211
 - SIM ID: Not Available
 - SIM STATUS: NA(CPIN SET: NA)
 - IMSI: Unknown
 - APN: VZWINTERNET
 - Carrier: Unknown
 - PCI: 0
 - EARFCN: 2300** (highlighted with a red box)
 - Registration Status: Not Registered
 - Module Name: ALT3100(FW: ALT3100_04_05_06_00_97_TF)
- Network:**

Network	Status
CELL  eth2	Uptime: 0h 0m 0s MAC-Address: 94:B9:B4:18:E0:7E Protocol: dhcp RX: 208.0000 B (4 Pkts.) TX: 15.0508 KB (43 Pkts.) IP Data: 14.5977 KB
LAN  br-lan	Uptime: 4d 14h 50m 56s MAC-Address: 00:A0:EB:03:04:FB Protocol: static RX: 83.9289 MB (677982 Pkts.) TX: 1.1049 GB (974295 Pkts.) IP Data: 1.1653 GB IPv4: 192.168.10.1/24 Link Status: UP, 100Mbps, Half-duplex
WAN  eth1	Uptime: 0h 3m 58s MAC-Address: 00:A0:EB:03:04:FC Protocol: dhcp RX: 1.4261 GB (3951703 Pkts.) TX: 100.4354 MB (877227 Pkts.) IP Data: 1.4612 GB IPv4: 192.168.101.79/24 Link Status: UP, 100Mbps, Full-Duplex

At the bottom, the 'DHCP Leases' section shows a table of active leases:

Hostname	IPv4-Address	MAC-Address	Leasetime remaining
HP-p6-2016	192.168.10.198	38:60:77:82:55:1a	10h 17m 44s
?	192.168.10.247	00:a0:eb:02:4c:85	11h 40m 18s

The system management screen for an EN-1000 router or an EN-2000 router indicates the router's EARFCN value (surrounded by a red rectangle in [Figure 5-1](#)). That value indicates the cellular wireless radiofrequency (RF) that the router has locked onto.

The value for the parameter **EARFCN** (EUTRA Absolute Radio Frequency Channel Number) indicates the absolute radiofrequency channel number for EUTRA (Evolved UMTS Terrestrial Radio Access), where UMTS indicates the Universal Mobile Telecommunication System.

[Table 5-1](#) lists EARFCN radiofrequencies and corresponding Verizon Wireless radio-frequency bands for EN-1000 and EN-2000 routers in the U.S. and North America. [Table 5-2](#) lists EARFCN radiofrequencies and corresponding carrier radiofrequency bands for EN-1000 and EN-2000 routers in the U.K. and Europe.

Table 5-1. EARFCN Radiofrequency Bands in the U.S. and North America

Range of EARFCN Radiofrequencies	Verizon Wireless Radiofrequency Band
600 to 1199	Band 2
1950 to 2399	Band 4
2400 to 2699	Band 5
5180 to 5279	Band 13

Table 5-2. EARFCN Radiofrequency Bands in the U.K. and Europe

Range of EARFCN Radiofrequencies	Radiofrequency Band
_____ to _____	Band ____
_____ to _____	Band ____
_____ to _____	Band ____
_____ to _____	Band ____

After you have reviewed radiofrequency bands for the cellular wireless interface, continue with one of the following:

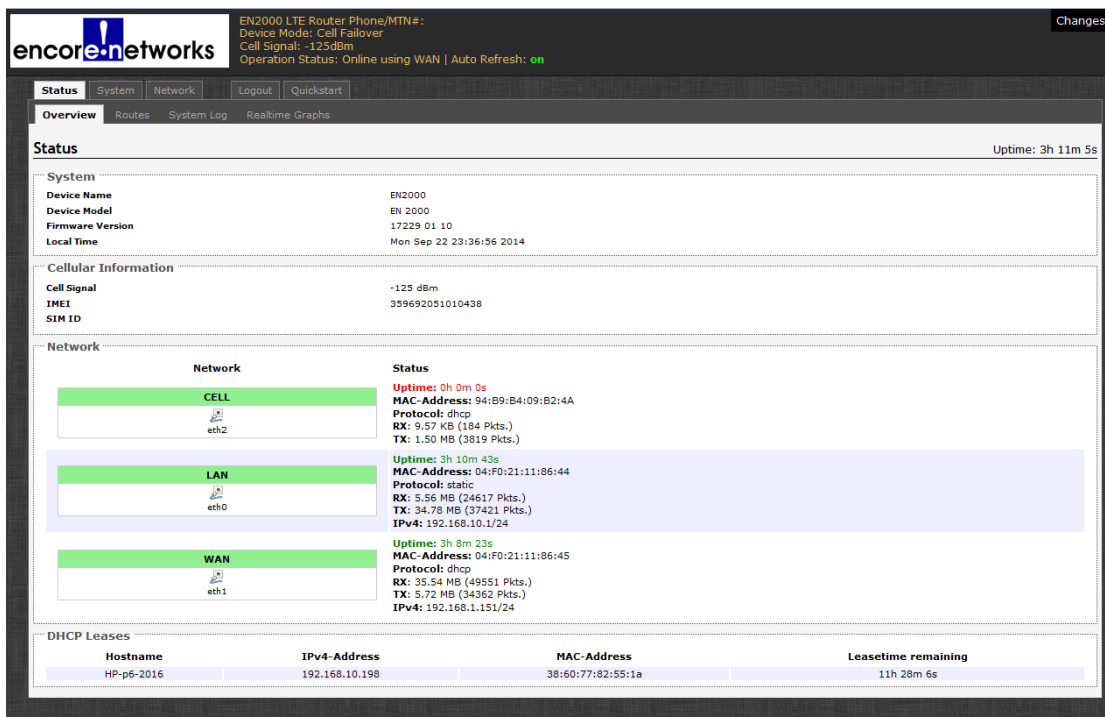
- [Section 5.2, APN Configuration in the USA and North America](#), on page 4
- [Section 5.3, APN Configuration in the UK and Europe](#), on page 6

5.2 APN Configuration in the USA and North America

Some cellular wireless carriers provide over-the-air (OTA) assignment of the APN string. Other carriers may provide an APN to configure manually.

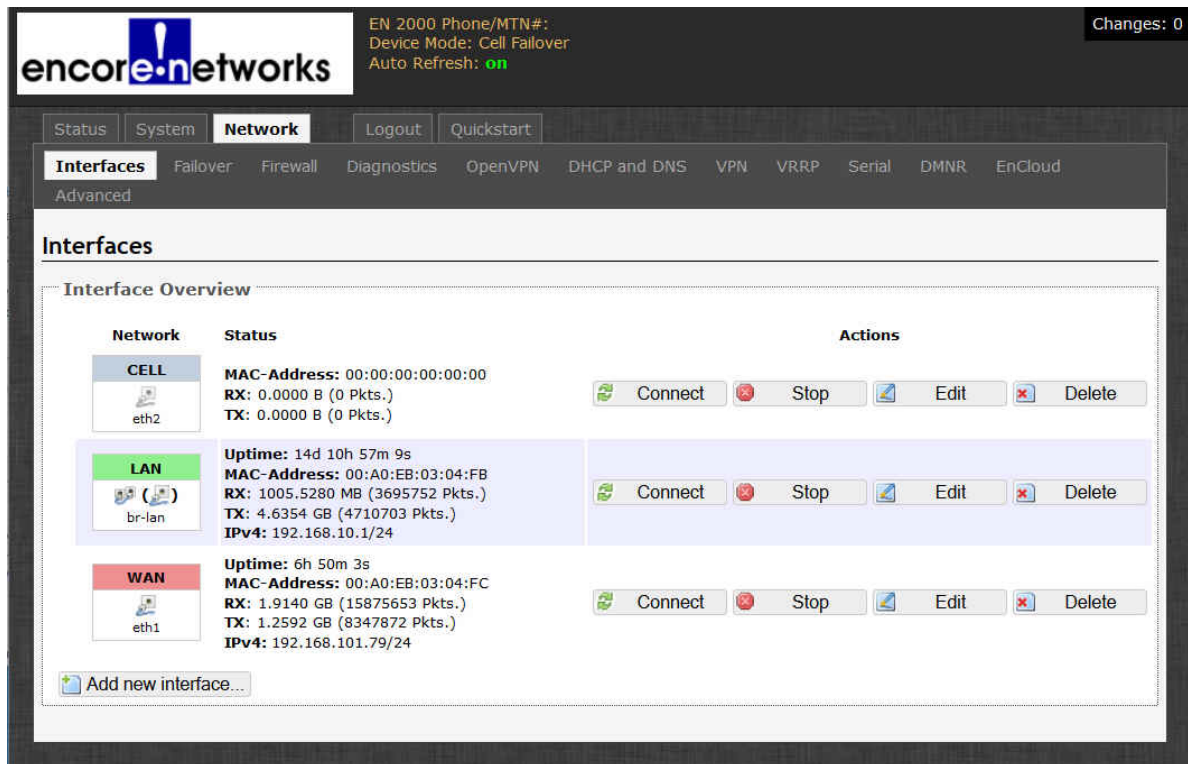
- 1 Connect the EN-2000's wireless antennas, insert the SIM into the EN-2000, position the EN-2000 for good coverage in the wireless network, and power up the EN-2000.
- 2 Wait for the provider to download the EN-2000's APN. After about 15 minutes:
 - ❖ If the EN-2000's Net Status LED is flashing, the cellular connection is good and the APN has been downloaded. (That is the most likely outcome.) You do not need to follow the rest of this procedure.
 - ❖ If the Net Status LED is still off, perform the following steps to set the APN for the cellular wireless interface.
- 3 Log into the EN-2000 management system. (See [Logging In](#), in the document [Using the EN-2000's Management System](#), for a detailed procedure.)
 - ❖ The EN-2000 Status Overview Screen is displayed ([Figure 5-2](#)).

Figure 5-2. EN-2000 Status Overview Screen



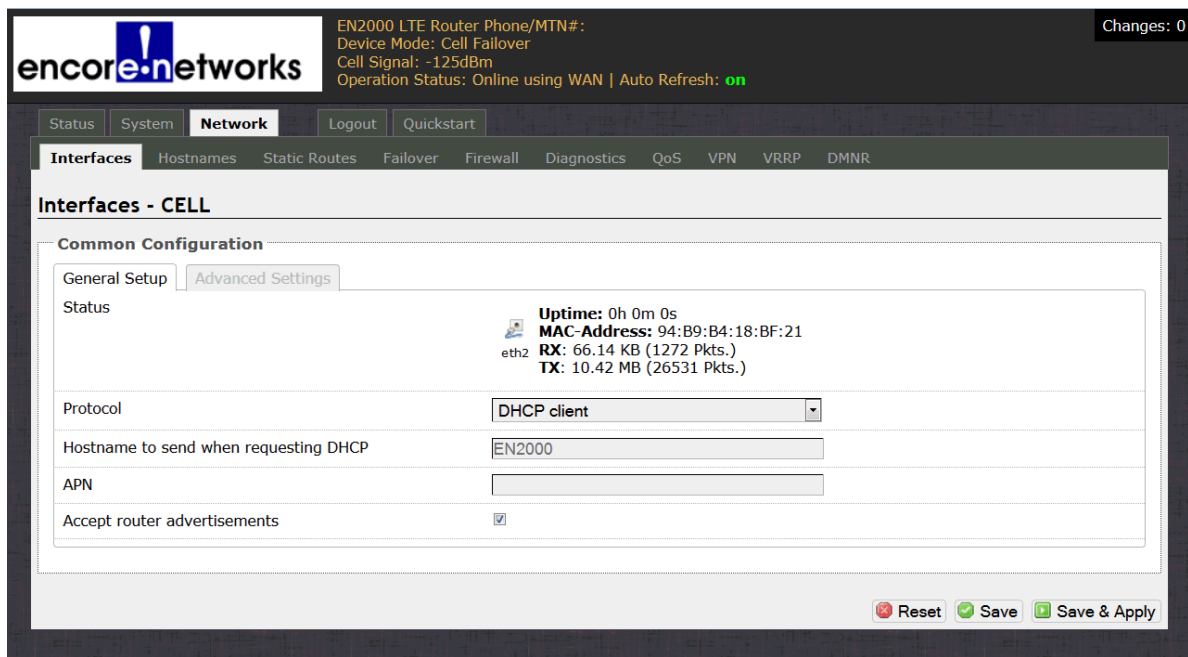
- 4 On the EN-2000 management system, select the **Network** tab.
- 5 Then select the **Interfaces** tab.
 - ❖ The Network Interface Screen is displayed, listing the EN-2000's cellular wireless, LAN, and WAN interfaces (similar to [Figure 5-3](#)).

Figure 5-3. Network Interface Screen



- 6 On the Network Interface Screen, select the **Edit** button in the row for the **Cell** interface.
 - ❖ The Cellular Wireless Common Configuration Screen, General Set-Up for a Chassis with One SIM, is displayed. [Figure 5-4](#) lists the DHCP client protocol.

Figure 5-4. Cellular Wireless Common Configuration Screen, General Set-Up for a Chassis with One SIM



One of the following might occur:

- The APN might be displayed automatically. If so, and if your network administrator has not designated use of a different APN, you do not need to follow the rest of this procedure. In that case, go to [step 9](#).
- If your network administrator has designated a different APN to use, continue to [step 7](#).
- If no APN is displayed, indicating a connection problem, continue to [step 7](#).

- 7 The network administrator might confer with the wireless carrier's network administrator to obtain the APN. In the **APN** field, type that APN value.

Note: The Telit LE910 series of LTE modules might not show the APN that the user configures for the module. That is, if the carrier detects that the configured APN is incorrect for that module, the carrier may assign a default APN to that module.

However, the default APN might not provide the full functionality of the module.

If the user sees that the module's APN has changed—that is, if the carrier-dependent default APN (instead of the configured APN) is displayed for the module, for a significant amount of time—then it is possible that:

- the APN is not configured at all,
or
- the configured APN is not accepted by the module, and the carrier may have enforced its default APN.

In either case, the user may wish to contact the carrier to determine the correct APN to assign to the module.


- 8 Then select the **Save & Apply** button at the lower right of the screen.
 - ❖ The new APN is assigned to the EN-2000.
- 9 You have completed APN configuration for the cellular wireless interface. Go to [Section 5.4, Advanced Settings](#), on page 12.

5.3 APN Configuration in the UK and Europe

- 1 Connect the EN-2000's wireless antennas, insert each SIM into the EN-2000, position the EN-2000 for good coverage in the wireless network, and power up the EN-2000.
- 2 Log into the EN-2000 management system. (See [Logging In](#), in the document [Using the EN-2000's Management System](#), for a detailed procedure.)
 - ❖ One of the following is displayed:
 - The Status Overview Screen for a Chassis with One SIM ([Figure 5-5](#))
 - The Status Overview Screen for a Chassis with Two SIMs ([Figure 5-6](#))

Note: The extended [Note](#) on page 2 and page 3 of the document [Configuring the EN-2000 for its Network Functions](#) discusses the subtle differences in display of SIM information on a screen for a chassis with two SIMs, a screen for a chassis with one SIM, and a screen for a chassis with no SIM.

Figure 5-5. Status Overview Screen for a Chassis with One SIM



EN 2000 Phone/MTN#:
 Device Mode: Cell Failover
 Auto Refresh: on

Changes: 0

Status
System
Network
Logout
Quickstart

Overview
Routes
System Log
Realtime Graphs
EnCloud

Status Uptime: 4h 0m 59s




System

Device Name	EN_Router
Device Model	EN 2000
Firmware Version	17322 05 00
Build	246_sk1
Local Time	Tue Feb 27 18:53:22 2018
Operation Status	Online using WAN



Cellular Information

RSSI	-80 dBm
RSRP	-106 dBm
RSRQ	-14 dB
Connection Type	E-UTRAN(LTE)
IMEI	351622071198259
SIM ID	8944100030031919708
SIM STATUS	READY(CPIN SET: NA)
IMSI	234159505512784
APN	wlapn4.com
Carrier	vodafone UK
PCI	0
EARFCN	6300
Registration Status	Denied
Module Name	LE910-EU V2(FW: 20.00.402)

Network

Network	Status
CELL  usb0	MAC-Address: 00:00:00:00:00:00 Protocol: ncm RX: 0.0000 B (0 Pkts.) TX: 0.0000 B (0 Pkts.) IP Data: 0.0000 B
LAN  br-lan	Uptime: 4h 1m 23s MAC-Address: 00:A0:EB:80:A8:60 Protocol: static RX: 397.7412 KB (3922 Pkts.) TX: 835.0420 KB (2782 Pkts.) IP Data: 1.1144 MB IPv4: 192.168.10.1/24 Link Status: UP, 100Mbps, Full-Duplex
WAN  eth1	Uptime: 4h 1m 19s MAC-Address: 00:A0:EB:80:A8:61 Protocol: dhcp RX: 6.5545 MB (34148 Pkts.) TX: 2.3480 MB (15586 Pkts.) IP Data: 8.2385 MB IPv4: 172.17.1.51/24 Link Status: UP, 100Mbps, Full-Duplex

Wireless

AR9342 802.11an Radio 	SSID: encore_wifi60_5GHz Mode: Master Channel: 136 (5.680 GHz) Bitrate: 300 Mbit/s BSSID: 00:A0:EB:80:A8:62	Encryption: WPA2 PSK (AUTO) ACK Timeout: 25 DFS Status: Disabled
AR9280 802.11abgn Radio 	SSID: encore_wifi60_2.4GHz Mode: Master Channel: 11 (2.462 GHz) Bitrate: 300 Mbit/s BSSID: 00:A0:EB:80:A8:63	Encryption: WPA2 PSK (AUTO) ACK Timeout: 64 DFS Status: Disabled


Associated Stations (0)

MAC-Address	Network	Device Name	Last IP	Signal	Signal/Chains	Noise	TX Rate	RX Rate	TX-CCQ
No information available									

DHCP Leases

Hostname	IPv4-Address	MAC-Address	Leasetime remaining
There are no active leases.			

Figure 5-6. Status Overview Screen for a Chassis with Two SIMs



EN 2000 Phone/MTN#:
Device Mode: Cell Failover
Auto Refresh: on

Changes: 0

Status | System | Network | Logout | Quickstart

Overview | Routes | System Log | Realtime Graphs | EnCloud

Status Uptime: 1h 4m 34s

System

Device Name: EN2000
Device Model: EN 2000
Firmware Version: 17322 05 00
Build: 247Y3w
Local Time: Wed Feb 28 12:50:47 2018
Operation Status: Online using WAN

Cellular Information

RSSI: -80 dBm
RSRP: -107 dBm
RSRQ: -15 dB
Connection Type: E-UTRAN(LTE)
IMEI: 351622071198259
SIM ID: 89441000300331919708
SIM STATUS: READY(CPIN SET: NA)
IMSI: 24159505512784
APN: wapn4.com
Carrier: vodafone UK
PCI: 134072606
EARFCN: 6300
Registration Status: Registered
Module Name: 332(FW: 20.00.402)
SIM Slot: 1
SIM Switch Reason: Primary is Active
SIM Failback Status: Wed Feb 28 12:55:32 EST 2018: Started Dualsim application

Network

Network	Status
<div>CELL</div> <div>usb0</div>	MAC Address: 00:00:00:00:00:00 Protocol: ncm RX: 0.0000 B (0 Pkts.) TX: 0.0000 B (0 Pkts.) IP Data: 0.0000 B
<div>LAN</div> <div>br-lan</div>	Uptime: 1h 5m 10s MAC Address: 00:A0:EB:80:A8:50 Protocol: static RX: 1.9553 MB (16276 Pkts.) TX: 3.8522 MB (16798 Pkts.) IP Data: 5.5708 MB IPv4: 192.168.10.1/24 Link Status: UP, 100Mbps, Full-Duplex
<div>WAN</div> <div>eth1</div>	Uptime: 1h 5m 7s MAC Address: 00:A0:EB:80:A8:61 Protocol: dhcp RX: 774.0205 KB (6437 Pkts.) TX: 76.4824 KB (1633 Pkts.) IP Data: 821.8906 KB IPv4: 172.17.1.51/24 Link Status: UP, 100Mbps, Full-Duplex

Wireless

AR9342 802.11an Radio

AP

SSID: [encore_wifi60_5GHz](#)
Mode: Master
Channel: 157 (5.785 GHz)
Bitrate: 300 Mbit/s
BSSID: 00:A0:EB:80:A8:62

Encryption: WPA2 PSK (AUTO)
ACK Timeout: 25
DFS Status: Disabled

AR9280 802.11abgn Radio

AP

SSID: [encore_wifi60_2.4GHz](#)
Mode: Master
Channel: 11 (2.462 GHz)
Bitrate: 300 Mbit/s
BSSID: 00:A0:EB:80:A8:63

Encryption: WPA2 PSK (AUTO)
ACK Timeout: 64
DFS Status: Disabled

Associated Stations (0)

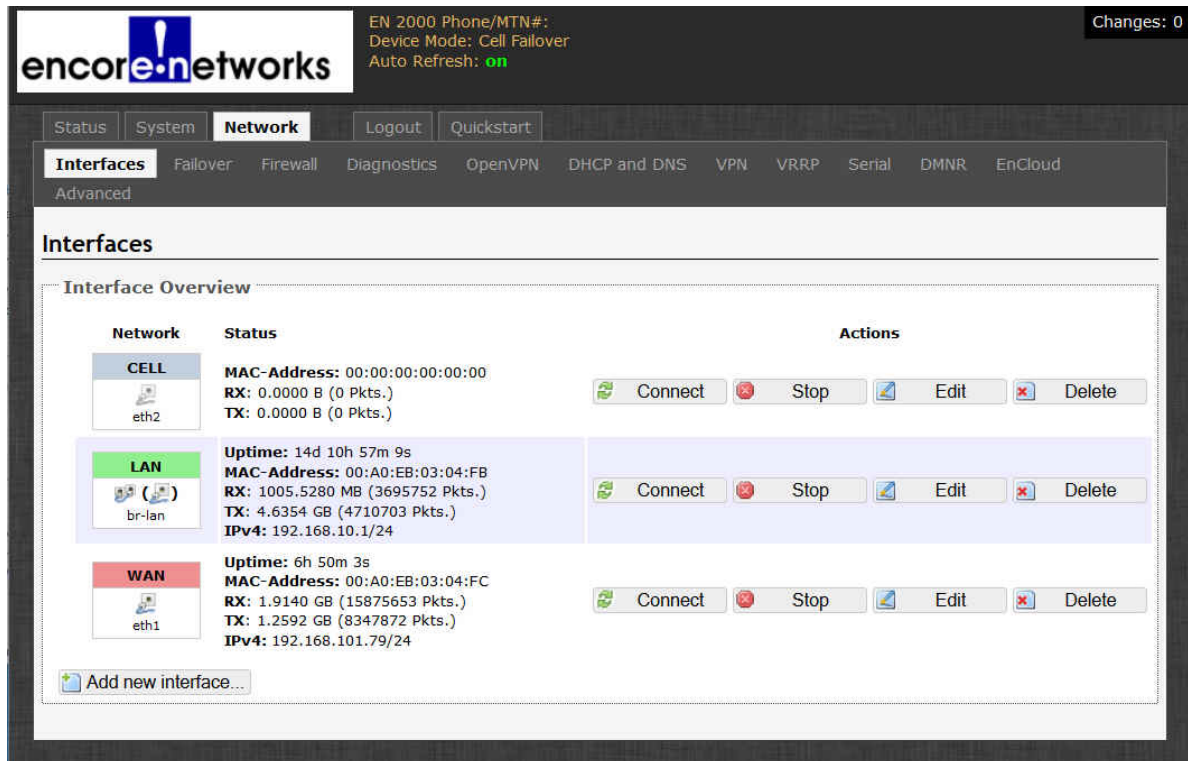
MAC-Address	Network	Device Name	Last IP	Signal	Signal/Chains	Noise	TX Rate	RX Rate	TX-CCQ
No information available									

DHCP Leases

Hostname	IPv4-Address	MAC-Address	Leasetime remaining
There are no active leases.			

- 3 On the EN-2000 management system, select the **Network** tab.
- 4 Then select the **Interfaces** tab.
 - ❖ The Network Interface Screen is displayed, listing the EN-2000's cellular wireless, LAN, and WAN interfaces (similar to [Figure 5-7](#)).

Figure 5-7. Network Interface Screen



- 5 On the Network Interface Screen, select the **Edit** button in the row for the **Cell** interface.
 - ❖ One of the following screens is displayed:
 - The Cellular Wireless Common Configuration Screen, General Set-Up for a Chassis with One SIM. [Figure 5-8](#) lists the NCM protocol. Go to [step 6](#), on page 10.
 - The Cellular Wireless Common Configuration Screen, General Set-Up for a Chassis with Two SIMs. [Figure 5-9](#) also lists the NCM protocol. Go to [step 9](#), on page 11.

Figure 5-8. Cellular Wireless Common Configuration Screen, General Set-Up for a Chassis with One SIM

EN 2000 Phone/MTN#:
 Device Mode: Cell Failover
 Auto Refresh: **on**

Changes: 0

encore networks

Status System **Network** Logout Quickstart

Interfaces Wifi Hotspot Failover Diagnostics Firewall OpenVPN DHCP and DNS VPN VRRP DDNS

DMNR EnCloud Advanced

Interfaces - CELL

Common Configuration

General Setup **Advanced Settings** Physical Settings

Status

MAC-Address: 00:00:00:00:00:00
 RX: 0.0000 B (0 Pkts.)
 TX: 0.0000 B (0 Pkts.)

Protocol NCM

Modem device /dev/ttyACM3

Service mode Automatic / Any

APN Index 1

APN

APN Protocol IP

PIN

Authentication type None

PAP/CHAP username

PAP/CHAP password

Reset Save Save & Apply

- 6 Confer with your network administrator for parameter values to establish the APN. (Your network administrator might confer with an administrator of the carrier network to obtain values to establish the APN.)
- 7 On a screen for a chassis with one SIM, do all of the following:
 - a Enter values for the following parameters for the APN:
 - **APN Index**
 - **APN**
 - **APN Protocol**
 - **PIN** (Personal Identification Number)
 - **Authentication Type**
 - **PAP/CHAP Username**
 - **PAP/CHAP Password**
 - b Then select the **Save & Apply** button at the lower right of the screen.
 - ❖ The APN is assigned to the EN-2000.

- 8 You have completed APN configuration for the cellular wireless interface. Go to [Section 5.4, Advanced Settings](#), on page 12.

Figure 5-9. Cellular Wireless Common Configuration Screen, General Set-Up for a Chassis with Two SIMs

The screenshot displays the 'Interfases - CELL' configuration page. At the top, there's a status bar with 'EN 2000 Phone/MTN#: Device Mode: Cell Fallback Auto Refresh: on'. Below this is a navigation menu with tabs: Status, System, Network (selected), Logout, and Quickstart. Under the 'Network' tab, there's a sub-menu with 'Interfases', Wifi, Hotspot, Fallback, Diagnostics, Firewall, OpenVPN, DHCP and DNS, VPN, VRRP, Serial, DMNR, EnCloud, and Advanced. The main content area is titled 'Interfases - CELL' and contains a 'Common Configuration' section with four sub-tabs: General Setup (selected), Advanced Settings, Physical Settings, and SIM Management. The 'General Setup' tab shows various configuration fields for the cellular interface. At the top right of this section, it says 'Changes:'. The fields include: Status (with MAC-Address: 00:00:00:00:00:00, RX: 0.0000 B (0 Pkts.), TX: 0.0000 B (0 Pkts.)), Protocol (NCM), Modem device (/dev/ttyACM3), Service mode (Automatic / Any), APN Index (1), APN (wapn4.com), Authentication type (PAP), Username (user), Password (masked with ****), CPIN (masked with ****), Second APN Index (1), Second APN (wapn4.com), Authentication type (PAP), Second APN Username (user), Second APN Password (masked with ****), and Second CPIN (masked with ****). At the bottom right, there are buttons for Reset, Save, and Save & Apply.

- 9 Confer with your network administrator for parameter values to establish the APN for each cellular wireless carrier. (Your network administrator might confer with administrators of the carrier networks to obtain values to establish each APN.)
- 10 On a screen for a chassis with two SIMs, do all of the following:
- Enter values for the following parameters for the APN of one carrier:
 - **APN Index**
 - **APN**
 - **Authentication Type**
 - **[APN] Username**
 - **[APN] Password**
 - **CPIN**
 - Enter values for the following parameters for the APN of the other carrier:
 - **Second APN Index**
 - **Second APN**

- **Authentication Type**
 - **Second APN Username**
 - **Second APN Password**
 - **Second CPIN**
- c Then select the **Save & Apply** button at the lower right of the screen.
- ❖ The APN for each carrier is assigned to the EN-2000.
- 11 You have completed APN configuration for the cellular wireless interface. Go to [Section 5.4, Advanced Settings](#), on page 12.

5.4 Advanced Settings

- 1 On the Cellular Wireless Common Configuration Screen, select the tab for **Advanced Settings**.
 - ❖ One of the following screens is displayed:
 - Cellular Wireless Common Configuration Screen, Advanced Settings for a Chassis with One SIM (similar to [Figure 5-10](#))
 - Cellular Wireless Common Configuration Screen, Advanced Settings for a Chassis with Two SIMs (similar to [Figure 5-11](#))

Figure 5-10. Cellular Wireless Common Configuration Screen, Advanced Settings for a Chassis with One SIM

The screenshot displays the Encore Networks web interface. At the top, the logo "encore networks" is on the left, and status information "EN 2000 Phone/MTN#: Device Mode: Cell Failover Auto Refresh: on" is on the right. A "Changes: 0" indicator is in the top right corner. Below the logo, there are tabs for "Status", "System", "Network", "Logout", and "Quickstart". The "Network" tab is selected, and within it, the "Interfaces" sub-tab is active. The "Interfaces" sub-tab has a dropdown menu showing "DMNR", "EnCloud", and "Advanced". The main content area is titled "Interfaces - CELL". Underneath, there's a "Common Configuration" section with three sub-tabs: "General Setup", "Advanced Settings", and "Physical Settings". The "Advanced Settings" tab is selected. It contains several configuration options:

- Enable Toll Saver**: Checked. Description: "If Toll Saver is enabled and cell is lower priority then bring it down, if any higher priority interface is up".
- Use broadcast flag**: Unchecked. Description: "Required for certain ISPs, e.g. Charter with DOCSIS 3".
- Use default gateway**: Checked. Description: "If unchecked, no default route is configured".
- Use DNS servers advertised by peer**: Checked. Description: "If unchecked, the advertised DNS server addresses are ignored".
- Dongle connection delay**: Input field with value "20".
- Use gateway metric**: Input field with value "20".
- Client ID to send when requesting DHCP**: Empty input field.
- Vendor Class to send when requesting DHCP**: Empty input field.
- Override MAC address**: Empty input field.
- Override MTU**: Input field with value "1360".

 At the bottom right of the configuration area, there are three buttons: "Reset" (with a red X icon), "Save" (with a green checkmark icon), and "Save & Apply" (with a green checkmark icon).

Figure 5-11. Cellular Wireless Common Configuration Screen, Advanced Settings for a Chassis with Two SIMs

The screenshot shows the 'Advanced Settings' tab for the Cellular Wireless Common Configuration. The interface includes a top navigation bar with 'Status', 'System', 'Network', 'Logout', and 'Quickstart'. Below this is a 'Network' section with various tabs like 'Wifi', 'Hotspot', 'Failover', etc. The main content area is titled 'Interfaces - CELL' and contains a 'Common Configuration' section with four sub-tabs: 'General Setup', 'Advanced Settings' (selected), 'Physical Settings', and 'SIM Management'. The 'Advanced Settings' tab contains several configuration options with checkboxes and input fields. At the bottom right, there are buttons for 'Reset', 'Save', and 'Save & Apply'.

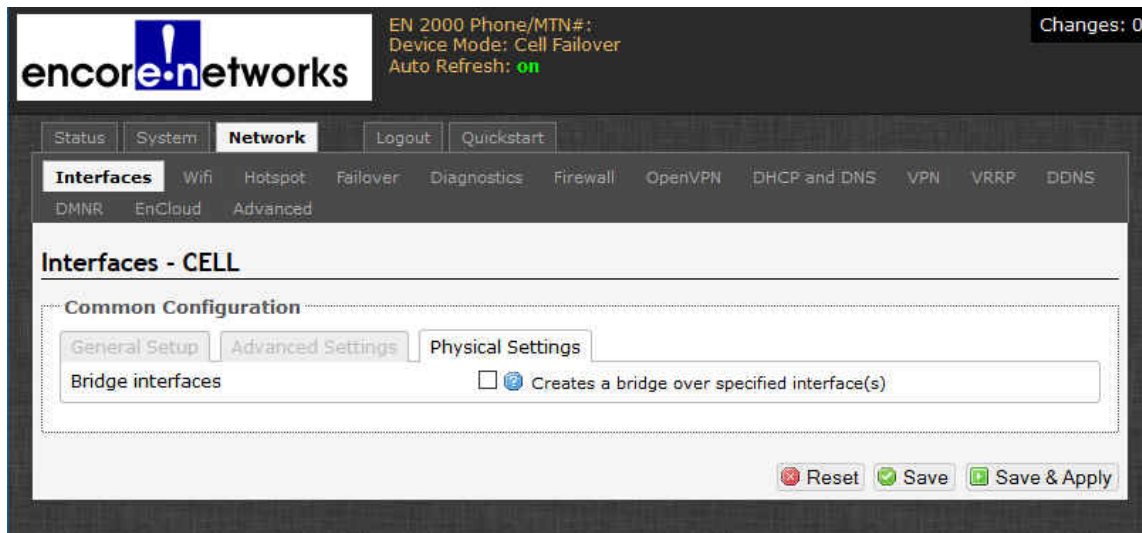
Configuration Option	Value / Status
Enable Toll Saver	<input type="checkbox"/> If Toll Saver is enabled and cell is lower priority then bring it down, if any higher priority interface is up
Use broadcast flag	<input type="checkbox"/> Required for certain ISPs, e.g. Charter with DOCSIS 3
Use default gateway	<input checked="" type="checkbox"/> If unchecked, no default route is configured
Use DNS servers advertised by peer	<input checked="" type="checkbox"/> If unchecked, the advertised DNS server addresses are ignored
Dongle connection delay	20
Use gateway metric	20
Client ID to send when requesting DHCP	
Vendor Class to send when requesting DHCP	
Override MAC address	
Override MTU	1492

- 2 Confer with your network administrator to determine values for the parameters on the screen.
- 3 When you have finished entering parameter values, select the **Save & Apply** button (in the lower right corner of the screen).
 - ❖ The settings for the screen are saved, and are effective immediately.
- 4 You have completed Advanced Settings for the cellular wireless interface. Go to [Section 5.5, Physical Settings](#), on page 13.

5.5 Physical Settings

- 1 On the Cellular Wireless Common Configuration Screen, select the tab for **Physical Settings**.
 - ❖ The Cellular Wireless Common Configuration Screen, Physical Settings, is displayed (similar to [Figure 5-12](#))
- Note:** The screen is identical for a chassis with one SIM and a chassis with two SIMs. The only difference is that the screen for the chassis with two SIMs includes a tab for SIM Configuration.

Figure 5-12. Cellular Wireless Common Configuration Screen, Physical Settings



- 2 Confer with your network administrator to determine values for the parameters on the screen.
- 3 When you have finished entering parameter values, select the **Save & Apply** button (in the lower right corner of the screen).
 - ❖ The settings for the screen are saved, and are effective immediately.
- 4 You have completed Physical Settings for the cellular wireless interface. Go to [Section 5.6, SIM Management](#), on page 14.

5.6 SIM Management

- 1 On the Cellular Wireless Common Configuration Screen, select the tab for **SIM Management**.

Note: The **SIM Management** tab is available only if a chassis has two SIMs. (If there is no SIM Management tab, you have completed common configuration of the cellular wireless interface. Go to [step 8](#), on page 17.)

❖ The Cellular Wireless Common Configuration Screen, SIM Management, is displayed ([Figure 5-13](#)).

Note: The SIM Management Screen is displayed only if a chassis has two SIMs.

Figure 5-13. Cellular Wireless Common Configuration Screen, SIM Management

encore!networks

EN 2000 Phone/MTN#:
Device Mode: Cell Failover
Auto Refresh: on

Changes: 0

Status System **Network** Logout Quickstart

Interfaces Wifi Hotspot Failover Diagnostics Firewall OpenVPN DHCP and DNS VPN VRRP Serial DMNR EnCloud Advanced

Interfaces - CELL

Common Configuration

General Setup Advanced Settings Physical Settings **SIM Management**

☒ Enable automatic switching

Primary SIM Slot SLOT 1

Primary Failure Retries 3

Primary Failure Interval 60 secs

Error Conditions for Primary SIM

☒ On weak signal

RSSI -97

☐ On data connection fail

Ping1 IP Address 8.8.8.8
IP addresses to ping to check for failure

Ping2 IP Address 4.2.2.2
IP addresses to ping to check for failure

☒ Check for SIM detection

☐ On roaming

Secondary Failure Retries 3

Secondary Failure Interval 60 secs

Error Conditions for Backup SIM

☒ On weak signal

RSSI -97

☐ On data connection fail

Ping1 IP Address 8.8.8.8
IP addresses to ping to check for failure

Ping2 IP Address 4.2.2.2
IP addresses to ping to check for failure

☒ Check for SIM detection

☐ On roaming

Initial Failback Time 120
Initial Scheduled Failback to Primary SIM (minutes)

Subsequent Failback Time 600
Subsequent Scheduled Failback to Primary SIM (minutes)

☐ Enable Backup SIM Test

Day of Week Thursday
Day of the Week to perform test

Hour of the Day (24 hours) 3
24hr clock

Minute of the hour 0
0-59

IP Address for Test 192.168.10.100
IP address to ping for test

Number of Pings to Send 5

Reset Save Save & Apply

- 2 In the top section of the SIM Management panel, check the box to **Enable automatic switching**.
- 3 Then enter information into the following fields:
 - **Primary SIM Slot:** Select which SIM will be the primary SIM (the SIM in **SLOT 1** or the SIM in **SLOT 2**). The primary SIM assumes default management of the cellular wireless connection.
 - **Primary Failure Retries:** Type the number of retries of the primary SIM's connection, when that connection has failed, before management shifts to the secondary SIM.
 - **Primary Failure Interval:** Type the number of seconds to wait after the retries have been exhausted. After that time has elapsed, management shifts to the secondary SIM.
 - **Error Conditions for Primary SIM:** Check the box if you want management to shift to the secondary SIM when the primary SIM has a **weak signal**.
 - **RSSI:** Enter a maximum value for the received signal strength indicator. If the signal strength surpasses that value, the primary SIM will switch connection of the cellular wireless interface to the secondary SIM.
 - Check the box if you want management to shift to the secondary SIM when the primary SIM experiences a **data connection failure**.
 - Enter the **Ping1 Address** (the principal IP address tested for connection).
 - Enter the **Ping2 Address** (the follow-up IP address tested for connection).
 - Indicate whether to **Check for SIM detection**.
 - Indicate whether SIM management shifts when **Roaming** to an area covered by another network.
- 4 In the next section of the SIM Management panel, enter information into the following fields (for the secondary SIM):
 - **Secondary Failure Retries:** Type the number of retries of the secondary SIM's connection, after that connection has failed, before management shifts to the primary SIM.
 - **Secondary Failure Interval:** Type the number of seconds to wait after the retries have been exhausted. After that time has elapsed, management shifts to the primary SIM.
 - **Error Conditions for Backup SIM:** Check the box if you want management to shift to the primary SIM when the secondary SIM has a **weak signal**.
 - **RSSI:** Enter the maximum value for the received signal strength indicator. If the signal strength surpasses that value, the secondary SIM will switch connection of the cellular wireless interface to the primary SIM.
 - Check the box if you want management to shift to the primary SIM when the secondary SIM experiences a **data connection failure**.
 - Enter the **Ping1 Address** (the principal IP address tested for connection).
 - Enter the **Ping2 Address** (the follow-up IP address tested for connection).

- Indicate whether to **Check for SIM detection**.
 - Indicate whether SIM management shifts when **Roaming** to an area covered by another network.
- 5** In the next section of the SIM Management panel, enter the following information:
- **Initial Failback Time:** Type the number of seconds that the cellular wireless interface remains under the secondary SIM's management before the secondary SIM attempts to shift management back to the primary SIM.
 - **Subsequent Failback Time:** Type the number of seconds to wait after an unsuccessful Initial Failback Time before the secondary SIM again attempts to shift management back to the primary SIM.
- 6** In the bottom section of the SIM Management panel, enter the following information:
- **Enable Backup SIM Test:** Check the box to enable testing of SIM management transfer.
 - Indicate the **Day of the Week** when testing will occur.
 - Indicate the **Hour** of that day when testing will occur.
 - Indicate the **Minute** of the hour when testing will begin.
 - Enter the **IP Address for Test**; that address will receive pings.
 - Enter the **Number of Pings to Send** to the test address.
- 7** When you have finished entering parameter values, select the **Save & Apply** button (in the lower right corner of the screen).
- ❖ The settings for the screen are saved, and are effective immediately.
- 8** You have completed configuration of SIM Management for the cellular wireless interface. You may log out of the EN-2000 management system, or you may configure other features.