



Raven-E EV-DO

for **TELUS**

Quick Start

20070914
Rev 3.0B

»» | Activating your Raven-E on the TELUS Network

- Setup Wizard
- Hardware Installation
- Indicator Lights

This Quick Start guide provides step-by-step directions for activating your Raven-E on the TELUS cellular network.

Tip: For additional configuration options, refer to the User Guide for your Raven-E.

Setup Wizard

You can find the Setup Wizard installation on the CD which came with your Raven-E or on the Sierra Wireless website: <http://www.sierrawireless.com/support/AirLink/default.aspx>. Use only the Setup Wizard for TELUS for best results.

Note: The Setup Wizard requires the Microsoft .NET framework v. 1.1 and Microsoft Windows 98, Windows 2000, Windows XP, or later. You can obtain .NET from Microsoft: <http://www.microsoft.com>.

1. Starting the Setup Wizard

- a. Connect the Raven-E to your computer using an Ethernet cable.
- b. Connect the power adapter and antenna to your Raven-E.
- c. Install the Setup Wizard by running TELUSSetup-Wizard.exe and follow the prompts.
- d. Run the Setup Wizard from the Windows Start menu.

Start > All Programs > AirLink Communications > Setup Wizard > Setup Wizard



Figure 1-1: Setup Wizard

- e. Click *Next* to start the Wizard process.

2. Connecting to the Modem

If you connected your Raven-E to the port on your computer, select *Connected to an Ethernet/USB Port* and use the drop down menu to select the Ethernet adapter or USB/net connection on your computer to which the modem is connected (most computers only have one adapter which will be selected for you). The default password for the modem is entered for you. Click *Next*.

Note: If you want to use USB with the Setup Wizard you will need to first install the driver, refer to Installing the USB driver section in this Chapter.

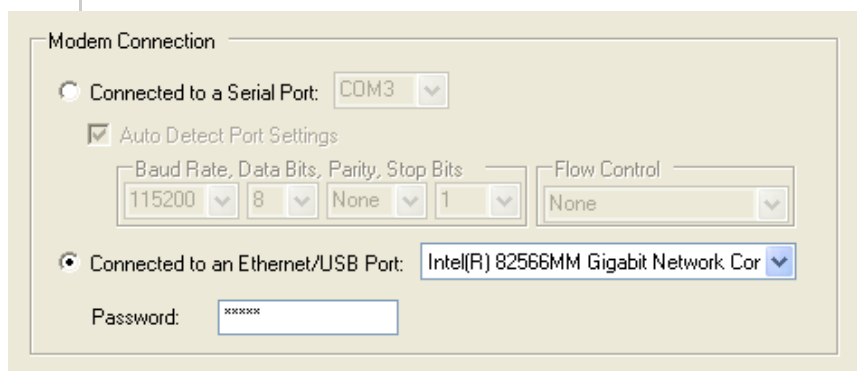


Figure 1-2: Setup Wizard : Ethernet Connection

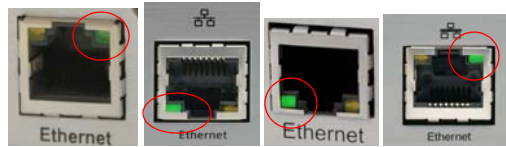


Figure 1-3: Ethernet Port

Tip: If the Setup Wizard is unable to detect the Raven-E, check the green link LED on the Ethernet port of the modem to see if it is lit to indicate an Ethernet connection with your computer. If you do not see this light or if your computer shows a “Network Cable Unplugged” message or icon, try a different Ethernet cable.

Note: You cannot activate with serial and would need USB/net to use set up wizard.

After the Setup Wizard connects to your Raven-E, the details for your specific model will be displayed. If the incorrect model is displayed, press the Reset Button on your Raven-E so the Wizard can attempt to connect again. Click *Next*.

	<p>Model: RavenE C3216E Technology: CDMA Firmware: C3216E_3.1.3.059 Carrier: TELUS Mobility ESN: 6025F2C4 IP Address: 0.0.0.0</p>
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Figure 1-4: Setup Wizard : Connected

3. Selecting Tasks

After the Wizard detects your Raven-E, you will be offered a menu of Setup tasks. Choose the tasks you need from those displayed.



- Update Firmware
- Activate Modem (OTASP)
- Activate Modem (Manual)
- Test Modem Setup

Figure 1-5: Setup Wizard : Task Menu

- **Update ALEOS Firmware:** Check the Sierra Wireless server for the latest ALEOS firmware.
- **Activate Modem (OTASP):** Configure your Raven-E to connect on the TELUS network using Over the Air Service Provisioning.
- **Activate Modem (Manual):** Configure your Raven-E to connect on the TELUS network using entered data.

OTASP is the preferred method of activating your Raven-E since all settings are downloaded from TELUS and requires very little input from you.

Tip: *If you are in an area of low cellular coverage, you may have more success activating your modem using Activate Modem (Manual).*

- **Test Modem Setup:** Verify your Raven-E is properly configured and connecting on the TELUS network.

Click *Next* when you have selected your desired options.

Note: *Based on your selections, you may not need to do all of the following Wizard steps.*

4. Optional: Update ALEOS

On occasion, Sierra Wireless releases updates to the firmware for your modem. These updates can include new features as well as bug fixes. To make sure your modem is at optimal performance, it is recommended to *Check for Updates* and *Update Now* if an update is found.

Note: *While checking for ALEOS Firmware updates, the Setup Wizard uses the Internet connection on your computer to connect to the Sierra Wireless server. Your Raven-E is not connected to the wireless network for this process. If you need to remove the Ethernet*



cable from your modem to connect to your usual Internet connection to Check for Updates, be sure to reconnect the Product Name before you select Update Now.

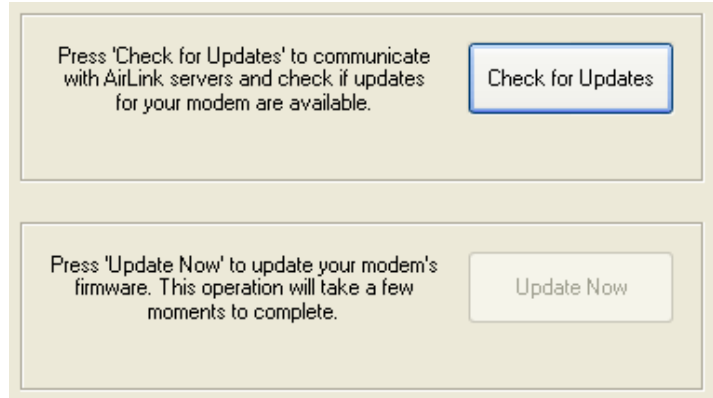


Figure 1-6: ALEOS Update

Tip: You can download current ALEOS firmware from the Sierra Wireless web site and install it separately.

Click *Next* when you are finished updating or if you choose not to update.

5. Activate Modem

The steps and data required to activate your Raven-E on the TELUS network varies depending on the model. The Wizard is designed to support older models as well as those currently shipping

Manual

To configure or provision your modem to work on the TELUS network, you will need device activation information provided by TELUS.

Fill in the requested information and click *Next* on each screen.

- **Activation Code** to unlock the internal hardware of your Raven-E. This code is provided by TELUS.
- Le **code d'activation** est le code requis pour saisir des données dans le Raven-E.



Activation Code

The Activation Code is provided by TELUS Mobility at the time of activation and is unique to each device. If "Update PRL List" was selected at the start then the "Master Subsidy Lockcode" (MSL) must be entered at this point.

Figure 1-7: Setup Wizard : Activation Code

- **MDN** - The phone number of your cellular account.
- **MIN** or **MSID** - The identification number for your cellular account.

MIN

Mobile Identification Number
The ten digit number assigned by the carrier for your modem.

Figure 1-8:

- **Static IP** - If you have a cellular account with a static IP address, check this box if it is displayed.

Caution: If you do not have a static IP account and check the Static IP box, you may not be able to activate your Raven-E or register on the TELUS network.

The Wizard will check the signal strength of your Raven-E (RSSI). Click Next to begin the activation process.

Note: The process may take a few minutes. Progress information will display across the bottom.

Ready to provision the modem using the values listed below. Please verify them and click 'Next' to proceed...

ESN	603F0987
MSL	123456
MIN	4161234567

RSSI

Signal strength is sufficient to provision this modem.



Figure 1-9: Setup Wizard : Signal Test

6. Test Modem Setup

Your connection of your Raven-E to the Internet is tested using the TELUS cellular network.

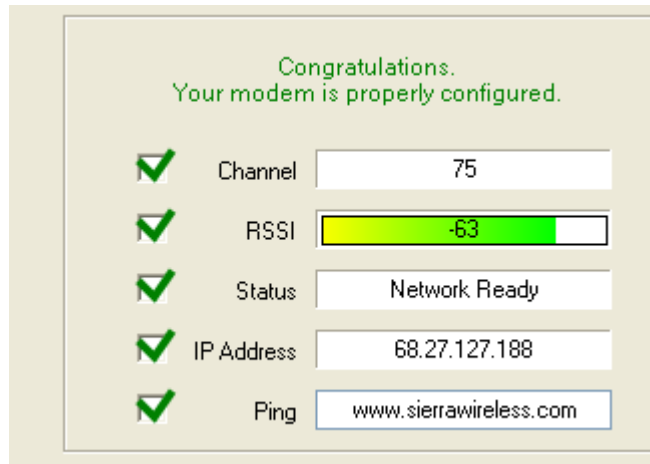


Figure 1-10: Setup Wizard: Connection Test

Green checks in the boxes indicate the tests were successful and your Raven-E is functioning properly. At this point your modem is configured and activated to work on the TELUS network.

Note: These tests, depending on the strength of your signal, may take a few minutes. Initially, while the tests are being performed, there may be red Xs in the boxes. The Status line will give an indication of the progress of the connection process.

If Test Modem Settings shows the status of your modem is "Data Connection Failed - Waiting for Retry", "No Service", "No Carrier", "Network Negotiation Failed", "Network Authentication Failed", "Modem Not Registered", or the Reg Net light on the modem is not lit, double-check your device activation information and return to the Activate Modem step to reconfigure your Raven-E.



Hardware Installation

Your Raven-E should be mounted in a position that allows easy access for the cables so they are not bent, constricted, in close proximity to high amperage, or exposed to extreme temperatures. The LEDs on the front panel should be visible for ease of operational verification. You should ensure that there is adequate airflow around the modem but that it is kept free from direct exposure to the elements, such as sun, rain, dust, etc.

In a mobile location, such as a car or truck, ensure the location is secure both against abrupt movements of the vehicle and from other items coming into contact with the modem.

Caution: *The Raven-E is in a hardened case and designed for use in industrial and extreme environments. However, unless you are using cables expressly designed for such environments, they can fail if exposed to the same conditions the Raven-E can withstand.*

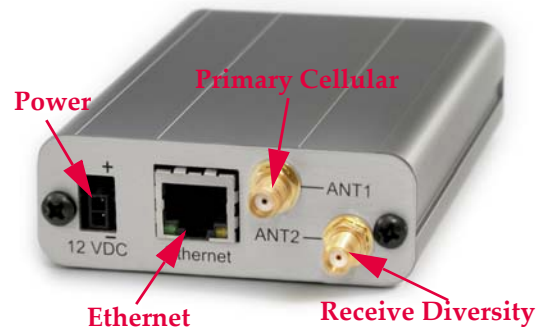


Figure 1-11: Raven-E Connectors

Cellular

Antennas selected should not exceed a maximum gain of 5 dBi under standard installation configuration. In more complex installations (such as those requiring long lengths of cable and/or multiple connections), it's imperative that the installer follow maximum dBi gain guidelines in accordance with the



radio communications regulations of the Federal Communications Commission (FCC), Industry Canada, or your country's regulatory body (if used outside the US).

- RSS-102 (...Health Canada's Safety Code 6 for Exposure of Humans to RF Fields)
- RSS-129 (800 MHz Dual-Mode CDMA Cellular Telephones) (Analogue & CDMA)
- RSS-133 r1 (2 GHz Personal Communications)
- <http://www.industrycanada.ca>.

Your Raven-E will work with most Dual-Band PCS cellular antennas with a SMA connectors that work in the high and low frequencies of the cellular technology of your modem. Connect the primary antenna or primary RF cable directly to the antenna connector on the back of the Raven-E.

Tip: *When using a cable to an antenna placed away from the modem, minimize the length of your cable. All gain from a more advantageous antenna placement can be lost with a long cable to the modem.*

Note: Use of receive diversity for EV-DO is optional. Data transmission and reception may be adversely affected if it is not used.

To provide for diversity in the signal reception, connect the second antenna to the second antenna port (SMA, labeled ANT2) on the back of the Raven-E.

Caution: *If you are not using a diversity antenna, you should disable the receive diversity option. In Ace Manager in the 1x/EV-DO group, configure *EVDODIVERSITY.*

Power

Your Raven-E can be used with either DC, available in most automobiles, or 110 AC, standard US wall power, with the appropriate power adapter. DC cables and AC adapters are available as optional accessories in addition to the one included with your Raven-E.



Note: When using a DC power source (such as a car battery or solar cell), Sierra Wireless recommends placing a fuse (1-2 Amp) on the line close to the power source to protect your power source from possible surges due to shorts or other line issues.

The DC power cable positive lead should be connected to the battery or power source positive terminal. The power cable negative lead should be connected to the battery or power source negative terminal.

Connecting to a Computer or other Device



Figure 1-12: Ethernet

The Ethernet port of your Raven-E can be connected directly to a computer or other Ethernet device with either a cross-over cable or a straight-through cable. The Ethernet port on the Raven-E is auto-sensing and connects at 10baseT. If you are connecting the modem to a hub or switch you should use a straight through cable or use the uplink port on the hub or switch with a cross-over cable.

Tip: *On some computers, the TCP receive window may be set to 16 kbytes. To optimize the throughput of your Raven-E, it is recommended that you change the TCP window to 128 kbytes to 256 kbytes using a TCP Optimizer.*

Indicator Lights

When your Raven-E is connected to power and an antenna, there is a specific pattern to the lights to indicate its operation mode.



Figure 1-13: Raven-E Indicator lights



- **Chan (channel)** - Indicates the modem has acquired a network channel.
- **Link** - Indicates a successful connection to the cellular network.
- **Reg (registration)** - Indicates the Raven-E has acquired an IP from TELUS.
- **RSSI (signal level)** - Light shows the strength of the signal and may be nearly solid (strong signal) or flashing (weaker signal). A slow flash indicates a very weak signal.

RSSI LED Ranges

RSSI/Signal LED Status	Ranges of RSSI (dBm)
On Solid	Equal to or stronger than -69
Fast Blink	-70 to -79
Normal blink	-80 to -89
Slow Blink	-90 to -99
Extinguished	Equal to or weaker than -100

- **TxRx (transmit/receive)** - The light will flash as data is transferred to and from the Raven-E modem on the remote network.
- **SrvC (service)** - Indicates when the connection is EV-DO. Unlit indicates 1x.
- **Pwr (power)** - Indicates the power adapter is connected and there is power getting to the Raven-E.
- The **Reset button** performs the same function as unplugging power from the modem and plugging it back in. Reset will not alter any saved configuration settings.

Light Patterns

The LEDs on the front of the modem will respond in different patterns to indicate modem states.

- **Normal** - Each LED, mentioned above, lit as applicable.
- **Start up** - The LEDs will cycle from left to right.
- **PassThru mode** - The Chan, Reg, and Link LEDs will blink in tandem. The Tx and Rx LEDs will blink when transmitting or receiving data.

Important Notice

Due to the nature of wireless communications, transmission and reception of data can never be guaranteed. Data may be delayed, corrupted (i.e., have errors) or be totally lost. Although significant delays or losses of data are rare when wireless devices such as the Sierra Wireless AirLink Raven-E are used in a normal manner with a well-constructed network, the Sierra Wireless AirLink Raven-E should not be used in situations where failure to transmit or receive data could result in damage of any kind to the user or any other party, including but not limited to personal injury, death, or loss of property. Sierra Wireless accepts no responsibility for damages of any kind resulting from delays or errors in data transmitted or received using the Sierra Wireless AirLink Raven-E, or for failure of the Sierra Wireless AirLink Raven-E to transmit or receive such data.

Safety and Hazards

Do not operate the Sierra Wireless AirLink Raven-E in areas where blasting is in progress, where explosive atmospheres may be present, near medical equipment, near life support equipment, or any equipment which may be susceptible to any form of radio interference. In such areas, the Sierra Wireless AirLink Raven-E **MUST BE POWERED OFF**. The Sierra Wireless AirLink Raven-E can transmit signals that could interfere with this equipment.

Do not operate the Sierra Wireless AirLink Raven-E in any aircraft, whether the aircraft is on the ground or in flight. In aircraft, the Sierra Wireless AirLink Raven-E **MUST BE POWERED OFF**. When operating, the Sierra Wireless AirLink Raven-E can transmit signals that could interfere with various onboard systems.

Note: Some airlines may permit the use of cellular phones while the aircraft is on the ground and the door is open. Sierra Wireless AirLink Raven-E may be used at this time.

The driver or operator of any vehicle should not operate the Sierra Wireless AirLink Raven-E while in control of a vehicle. Doing so will detract from the driver or operator's control and operation of that vehicle. In some states and provinces, operating such communications devices while in control of a vehicle is an offence.

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6,339,405	6,359,591	6,400,336	6,516,204	6,561,851
6,643,501	6,653,979	6,697,030	6,785,830	6,845,249
6,847,830	6,876,697	6,879,585	6,886,049	6,968,171
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5,490,165	5,504,773	5,506,865	5,511,073	5,535,239
5,544,196	5,568,483	5,600,754	5,657,420	5,659,569
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Consult our website for up-to-date product descriptions, documentation, application notes, firmware upgrades, troubleshooting tips, and press releases:

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Revision History

Revision number	Release date	Changes
1.x	2003-2005	AirLink Communications documentation - CDPD, CDMA, and GPRS.
2.x	Q2: 2005-Q2: 2007	AirLink Communications documentation - CDMA, EV-DO, EDGE, and HSDPA.
3.0	in draft	Converted documentation from AirLink Communications documentation format into Sierra Wireless documentation format. Phase II of the conversion completed. Raven modem line documentation is revised.

