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## Rugged Computing Customer FAQs for the Trimble Nomad 800 Series

In this document, “Trimble Nomad 800 series” refers to all 800 models of Trimble® Nomad® outdoor rugged handheld computers. Where information refers to one or more specific models, this is clearly indicated.

### What is the Trimble Nomad 800 series?

The Trimble Nomad 800 series is an ultra-rugged family of field computers for data collection and mobile field work. The Trimble Nomad series is offered in a range of configurations; optional features include an integrated GPS receiver that can provide 2 to 5 meter (HRMS), an integrated 2-megapixel digital camera, an integrated bar code scanner, and an integrated cellular modem. The Trimble Nomad series offers superior processing power, a high resolution outdoor-viewable screen, and a long-life battery that can run the device all day on a single charge. Powered by Windows Mobile® 6 and with built-in wireless 802.11g and Bluetooth wireless technology, the Trimble Nomad series offers powerful performance and all-in-one feature integration for high productivity even in the harshest conditions.



### What are the key features of the Trimble Nomad 800 series?

- An all-in-one device with powerful hardware, the Trimble Nomad 800 series is built for superior performance in harsh conditions. The Trimble Nomad series offers a range of hardware configurations to match your existing workflow and cost requirements.
- Optional integrated AT&T network compatible WWAN cellular modem for connecting to the Internet without tethering to an external modem or mobile phone. Integrated Bluetooth wireless technology and optional 802.11g technology also provide options for connecting to the Internet and corporate networks to access data and maps, and to send and receive email and instant messages.
- Optional integrated 2-megapixel digital camera makes it easy to collect photographs in the field without compromising on ruggedness or convenience.

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Trimble Mobile Computing Solutions Division, 4100 SW Research Way, Corvallis, OR 97333-1066, USA

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- Optional integrated GPS receiver with 2 to 5 meter accuracy (WAAS corrected). The integrated GPS receiver is optimized for data collection in harsh GPS conditions, including under forest canopy and near tall buildings.
- Optional integrated barcode laser scanner.
- The Trimble Nomad 800 series is an all-in-one, ultra-rugged solution—you don't have to compromise on ruggedness by carrying additional equipment, and there is only one battery to charge. Having one device also improves worker ergonomics and improves worker safety by reducing potentially risky distractions that can occur when handling a computing device and multiple additional sensors, instruments or other accessories.
- High resolution VGA display makes maps exceptionally clear. The Windows Mobile 6 operating system provides maximum flexibility in software choice and a familiar, easy-to-use interface so that field crews can be quickly trained to be more productive. Long-life field-replaceable Lithium-ion (Li-Ion) battery allows up to 15 hours operation with active use of GPS and wireless radios without the need to recharge.

*Note: For information on using and disposing of Li-Ion batteries, refer to the Trimble Nomad Handheld Computer Getting Started Guide.*

- Up to 2 GB on-board data storage, a Secure Digital (SD) card slot (all models), and a CompactFlash (CF) slot (models 800B, 800L, 800X) for expandable data storage ensures that you always have ample space for data and raster background maps.

### What different configurations are available for the Trimble Nomad 800 series?

The Trimble Nomad 800 series offers seven models with a variety of options, as illustrated in the chart below. (Note: each model is physically different; you cannot upgrade from one model to another.)

	RAM	FLASH	Keypad (Numeric or PDA)	Bluetooth	802.11	GPS	WWAN	Camera	Scanner
800B	128	512	NUM	<input type="checkbox"/>					
	128	512	PDA	<input type="checkbox"/>					
800L	128	1GB	NUM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
	128	1GB	PDA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
800LC	128	1GB	NUM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
	128	1GB	PDA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
800LE	128	1GB	NUM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
800X	128	2GB	NUM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
800XC	128	2GB	NUM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
800XE	128	2GB	NUM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## What is the difference between the numeric and PDA keypad?



Each Trimble Nomad 800 series handheld comes with a numeric keypad. Selected models are also offered with a PDA keypad configuration. You cannot swap keypads. The PDA keypad option contains the standard PDA keypad buttons including a directional keypad and two reprogrammable softkeys. The numeric keypad contains the standard PDA keypad keys and a 0–9 numeric keypad, TAB, backspace, “\*”, “+”, “-” and “.” keys. The numeric keypad is ideal for applications that require a lot of numeric data entry—for example meter reading, or quantity surveying.

## What is the Windows Mobile 6 operating system?

The Windows Mobile 6 operating system is the current Microsoft® operating system for mobile devices. Windows Mobile 6 provides a wide range of standard software applications that enable files such as Word and Excel to be transferred to a desktop operating system and worked on seamlessly.

The Trimble Nomad 800 series runs the Windows Mobile 6 operating system, allowing you to choose from the most comprehensive range of software available to meet your field requirements. In addition, this operating system features security enhancements, for more robust use when connected to a network and persistent storage memory so your data is protected from unexpected power loss. (Note: Models 800B, 800L, 800LC, 800LE and 800LD run Windows Mobile 6 Classic, and models 800X, 800XC and 800XE feature Windows Mobile 6 Professional.)

## Will software applications developed for Windows Mobile-based software run on the Windows Mobile 6 operating system?

Applications developed for the Windows Mobile-based software (Windows Mobile 2003 software for Pocket PCs or Windows Mobile version 5.0 software), should run on the Windows Mobile version 6 operating system. However, some of the new functionality in the Windows Mobile 6 operating system may not be available or compatible with software developed for earlier versions of Microsoft Windows Mobile operating system.

## Will software applications developed for QVGA screens run on the Trimble Nomad 800 series VGA screen?

In general, applications developed for a QVGA screen will scale correctly on a device with a VGA screen. For more information, contact your software vendor.

## Can I use post processed differential correction with the Trimble Nomad 800 series?

Yes. When using a Trimble Nomad 800 series handheld computer that has integrated GPS, data for post processing can be collected with the appropriate software application. Data collected in GPS field

software using the NMEA protocol cannot be post processed. The internal GPS receiver does not output carrier data, so it is not possible to use carrier post processing techniques.

### **Is WAAS or EGNOS enhancement of GPS available on the Trimble Nomad 800 Series?**

Selected Nomad models have an integrated GPS receiver and will support SBAS (Satellite Based Augmentation Systems) satellites under normal conditions, including WAAS (Wide Area Augmentation System) in the United States, and EGNOS (European Geostationary Navigation Overlay Service) in Europe.

### **What GPS output protocols are supported by the Trimble Nomad 800 series?**

The Trimble Nomad 800 series can output the NMEA and SiRF binary protocols.

### **Can I use an external antenna with my Trimble Nomad 800 series?**

The Trimble Nomad 800 series does not have an external antenna option. The device is designed to achieve 2 to 5 meter (HRMS) accuracy with the integrated antenna, with SBAS corrections. If higher accuracy is required, you can use the optional Nomad Serial Boot accessory to connect an external GPS receiver via 9-Pin RS-232 Serial data connection.

### **How do I use the Trimble Nomad 800 series to ensure best performance?**

When collecting point features or vertices, Trimble recommends that you log GPS data for at least 30 seconds, using a 1-second logging rate. Collecting multiple positions for a static feature helps to improve accuracy by averaging out the errors in individual GPS positions. In heavy canopy, or other difficult environments, logging for 1–2 minutes is recommended.

Pausing briefly (5–10 seconds) before logging a point feature or vertex also helps to get the best performance from the receiver. This allows you to ensure that the internal GPS receiver is horizontal and correctly located over the feature you are mapping, and allows the computed position to settle not be influenced by the recent movement of the handheld.

### **How does the Trimble Nomad 800 series perform in harsh GPS conditions?**

The Trimble Nomad 800 series can track all available GPS satellites. This allows you to get the best results when you work in many different environments, without having to adjust the GPS mask settings. The receiver performs well in harsh GPS environments, such as under heavy canopy and in urban areas.

### **What is the time to first fix for the Trimble Nomad 800 series?**

The Trimble Nomad 800 series can take up to one minute to get its first fix (GPS position) in an open sky when it hasn't been used for several hours. In a forested or urban environment where the entire sky is not visible to the unit a fix can take up to four minutes. When used within an hour of previous use, the time to first fix is typically less than 45 seconds.

### **Can I use other GPS software with the Trimble Nomad 800 series?**

The Trimble Nomad 800 series can provide GPS positioning data to applications that support NMEA protocol.

## What connectivity options does the Trimble Nomad 800 series support?

All Trimble Nomad 800 series models have integrated Bluetooth wireless technology. All Nomad models except 800B feature integrated 802.11g support for connecting to a variety of peripheral devices, or to the Internet and corporate networks for sending and receiving data, files, and email. The 800X, 800XC, 800XE, and the 800LD handhelds are equipped with a cellular modem for connecting to the Internet without the need for a separate device. The standard USB boot has a mini-USB client port, a USB host port and an audio jack. The mini-USB client port is for connecting and synchronizing your device with an office computer. The USB-host port is for connecting USB human interface devices (for example, keyboards, and some barcode scanners) and USB mass storage devices. The audio jack supports a mono speaker or a microphone combination headset.

## What can I use the Trimble Nomad 800 series' 802.11g capabilities for?

Trimble Nomad 800 series handheld computers that have an integrated 802.11b/g wireless Local Area Network (WLAN) radio can be used to receive data anywhere within the range of an 802.11g access point. 802.11g is sometimes referred to as wireless Ethernet. An 802.11g connection can be used to connect to the Internet (at broadband speeds) through an 802.11b or 802.11g access point. 802.11b has a maximum speed of 11 Mbps. Security options such as 802.1x, WEP, and WPA are supported.

There are many publicly available 802.11g access points (also known as "Hotspots") available. To find publicly available access points, use locator Internet sites such as [www.jiwire.com](http://www.jiwire.com).

Using the 802.11g radio in a Trimble Nomad series has no impact on GPS performance. However, when there is an active connection to an 802.11g access point, power consumption increases and the battery will discharge more rapidly.

## What can I use the Trimble Nomad 800 series' cellular modem capabilities for?

The Trimble Nomad 800X, 800XC, 800XE, and 800LD handhelds are equipped with an integrated cellular modem. Devices with a cellular modem are also described as having Wireless Wide Area Network (WWAN) capability as the modem can be used to transmit or receive data anywhere within the range of the mobile phone carrier's cellular network. You can use the cellular modem to:

- Perform database lookups in the field using the appropriate software
- Exchange or synchronize data with a remote server without returning to the office
- Access background maps from an Internet map server in the field
- Send or receive email in the field
- Send or receive SMS messages to other cell phone users

## Can the Nomad 800 series cellular modem be used for voice calls?

No. The modem is for data only and cellular voice calls are not supported. However, if connected to WiFi, Voice over Internet Protocol (VoIP) is possible using an application such as Skype and a headset (connect via Bluetooth for hands free communication). Unfortunately, EDGE data transfer rate is not robust enough to support VoIP via a cellular modem connection.

## Will the cellular modem work in my region?

The Trimble Nomad 800X, 800XC and 800XE handhelds are equipped with a quad band GSM module that operates in the frequency bands 850/900/1800/1900 MHz. This modem is AT&T network certified but the modem on these devices will work on any GSM network operating in these bands that does not

require subscriber devices to have carrier certification. Check with your carrier to see if they require handsets to have carrier certification to operate on their network. The 800X, 800XC and 800XE handhelds are certified for use in the USA, Canada, and Europe.

The Trimble Nomad 800LD handheld uses a Franklin wireless broadband modem and is certified for operation on the Sprint network in the USA. It will not work outside the USA and is not certified for use with any other provider within the USA. Information and instructions on activating a Sprint account are included with the modem. For details of Sprint's network coverage area refer to [www.sprint.com](http://www.sprint.com).

### **Will the cellular modem on the 800X, 800XC or 800XE handheld work on AT&T and T-Mobile in the USA or Rogers in Canada?**

Yes. The Nomad 800X series is AT&T network ready and has been tested by AT&T for their networks. In addition the Nomad series will work on T-Mobile and Rogers networks with the appropriate service plan and SIM card.

### **Will the Trimble Nomad broadband cellular modem accessory work on other Trimble devices?**

This accessory is for Trimble Nomad handhelds only and is not designed for use on any other Trimble handheld. The modem will work on a laptop or desktop computer with USB port.

### **Can I use the Trimble Nomad broadband cellular modem accessory on models other than the Trimble Nomad 800LD handheld?**

The Trimble Nomad 800LD handheld has a USB host port in the top of the device which the modem is inserted into, and then covered with the provided Extended Cap. The 800LD handheld ships with the broadband cellular modem, an Extended Cap and a customized modem support accessory. When properly installed on the top of the Nomad, this configuration is fully rugged to IP67 standards.

You can use the Trimble Nomad broadband modem with other Trimble Nomad series models by inserting the modem into the USB host port on the base of the device. This is not recommended as it is a non-rugged configuration. As the broadband modem accessory is a non-rugged device, the user bears all risk of damage to the accessory if subjected to drops, condensing humidity, submersion in liquids or other environmental hazards.

### **What can I use a Trimble Nomad 800 series' Bluetooth capabilities for?**

The Trimble Nomad 800 series has an integrated Bluetooth radio that you can use to establish cable-free connections to other Bluetooth devices that are within 10 meters.

Using a Bluetooth connection, you can communicate with Bluetooth-enabled devices such as mobile phones, desktop computers and more. You can also communicate with peripheral devices that use Bluetooth adaptors instead of serial or USB connections. In particular, you can add high-accuracy GPS capability by using a Bluetooth wireless connection.

Using the Bluetooth radio in a Trimble Nomad 800 series has no impact on GPS performance. However, when there is an active connection to another Bluetooth device, power consumption increases and the battery will discharge more rapidly..

### **What are the functions of the integrated digital camera?**

The Trimble Nomad 800LC, 800LE, 800XC and 800XE models include an integrated digital camera. You access the camera through an application that is pre-installed with the operating system. The camera

features a variety of shooting modes to make it easier to capture images in different lighting conditions, and it can also record video with audio. The 2-megapixel sensor can capture images with low, medium, or high compression, and in a choice of resolution from 320x240 to 1600x1200 pixels. The camera uses the standard Windows Mobile API for camera control, and it is compatible with other field software applications with integrated camera functionality.

### **What are the functions of the barcode scanner?**

The Trimble 800LE and 800XE models include an integrated barcode scanner. You can use your own barcode scanner software or the pre-installed ScanAgent application pre-installed with the operating system. To access the scanner, either press the arrow button on the keypad, or open the scanner SIP (soft input panel). The scanner can collect up to four scans per second, and features a bright scan line and aim mode. The scanner has a programmable scan angle, and supports most barcode symbologies.

### **How are the Trimble Nomad 800 series handhelds powered?**

The Trimble Nomad 800 series is supplied with a rechargeable, field-removable Li-Ion battery that provides up to 15 hours of battery life in normal use (including wireless radios and GPS). The battery is internally rechargeable using the international power supply that comes with the system. Spare rechargeable batteries, an external battery charger, and a 12 V vehicle adapter are also available as optional accessories. Charging the battery takes approximately 4.5 hours.

### **What can I do to prolong battery life?**

To maximize battery life, Trimble recommends the following:

- Turn off wireless radio services such as the cellular modem, Bluetooth and 802.11g, when not in use.
- Disconnect from the GPS receiver, when positioning is not required.
- Turn off the screen backlight or reduce the backlight brightness.
- Try to avoid using the handheld in very cold conditions ( $-20^{\circ}\text{C}/-4^{\circ}\text{F}$  and below).
- If you must use the Nomad in very cold conditions, turning on the backlight and increasing the load on the battery can help to warm the battery and actually increase battery life as compared to more conservative power usage.

### **What's in the box?**

The Trimble Nomad 800 series is supplied as standard with the following components and accessories:

- Power supply with international adaptor kit
- Rechargeable Lithium-Ion battery
- Package of two (2) screen protectors
- Hand strap
- Stylus pen
- Stylus lanyard
- Getting Started Disc (includes Microsoft ActiveSync® software)
- Getting Started Guide

- USB data cable

The Trimble Nomad 800LD contains the following additional items:

- Broadband cellular modem
- Extended Cap and modem support

### **What optional accessories are available for the Trimble Nomad 800 series?**

The following optional accessories are available for the Trimble Nomad 800 series:

- Serial interface cable (ACCAA-557)
- Replacement USB data cable (ACCAA-550)
- AC Charger (ACCAA-652)
- 12 V vehicle charger (ACCAA-653)
- Replacement rechargeable Lithium-Ion battery (ACCAA-101)
- Spare battery charger (ACCAA-650)
- AA Battery module (ACCAA-100)
- Nomad Trigger (barcode scanner enhancement) (ACCAA-301)
- Standard nylon carry case (ACCAA-600)
- Extended nylon carry case (use with Extended Cap) (ACCAA-601)
- Deluxe case with belt clip and shoulder strap (ACCAA-602)
- Black nylon carry case (MOLLE system compatible) (ACCAA-607)
- Replacement stylus pen (ACCAA-800)
- Stylus lanyard (ACCAA-807)
- Replacement hand strap (ACCAA-250)
- Replacement screen protectors, ultra-clear (package of two) (ACCAA-350)
- Replacement screen protectors, anti-glare (package of two) (ACCAA-358)
- GPS range pole bracket (ACCAA-751)
- Vehicle mount (ACCAA-752)
- Vehicle mount (not compatible with Nomad 800X/XC/XE models) (EGL-Z2007-M)
- USB boot (ACCAA-150)
- Serial boot (ACCAA-151)
- Wireless broadband modem (ACCAA-300)
- Standard CF-Cap (ACCAA-201)
- Extended CF-Cap (ACCAA-200)

### **What expansion options are available on the Trimble Nomad 800 series?**

The Trimble Nomad 800 series contains a fully sealed SD slot that you can use with an SD memory card with up to 2 GB capacity. Higher capacity SDHC cards up to 8GB manufactured by SanDisk and Kingston are also supported. You can use the integrated camera to log directly to an installed SD card.

Some applications may also support storage of data directly to SD. To access the SD slot, simply remove the top cap with the supplied screwdriver/stylus tool, install the card and re-install the top cap. Non-scanner and/or non-camera models also have a CompactFlash slot.

### **Are the camera or bar code scanner removable?**

No. For models with an integrated barcode scanner and/or digital camera, these components are hardwired into the device.

### **Where can I get more information?**

Visit [www.trimble.com/rugged](http://www.trimble.com/rugged) or contact your local Trimble reseller to learn more about Nomad, Yuma, Recon or Ranger outdoor rugged computers.