



## Rugged Computing Customer FAQs for the Trimble Nomad Series

In this document, “Trimble Nomad series” refers to all 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 series?

The Trimble Nomad 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 series?

- All-in-one device with powerful hardware. The Trimble Nomad series is built for superior performance in harsh conditions. The Trimble Nomad series offers a range of hardware configurations to match your existing workflow.
- Optional integrated AT&T network compatible 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.
- 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 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.
- High resolution VGA display makes raster 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. “Persistent storage” in the operating system ensures that your data is protected, even if power is lost.

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- 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 series?

The Trimble Nomad series offers eight 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)	Card slots	Bluetooth	802.11	GPS	WWAN	Camera	Scanner
800B	128	512	NUM	SD/CF	●					
	128	512	PDA	SD/CF	●					
800L	128	1GB	NUM	SD/CF	●	●	●			
	128	1GB	PDA	SD/CF	●	●	●			
800LC	128	1GB	NUM	SD	●	●	●		●	
	128	1GB	PDA	SD	●	●	●		●	
800LD	128	1GB	NUM	SD/USB	●	●	●			
800LE	128	1GB	NUM	SD	●	●	●		●	●
800X	128	2GB	NUM	SD/CF	●	●	●	●		
800XC	128	2GB	NUM	SD	●	●	●	●	●	
800XE	128	2GB	NUM	SD	●	●	●	●	●	●

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



Each Trimble Nomad 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 latest Microsoft® operating system for mobile devices. With a familiar Microsoft user interface, it provides a wide range of standard software applications that work seamlessly with your desktop operating system.

The Trimble Nomad 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 the Windows Mobile-based software.

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

Yes. When using a Trimble Nomad 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 available on the Trimble Nomad?

A Trimble Nomad handheld computer has an integrated GPS receiver. Trimble Nomad series models 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 series?**

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

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

The Trimble Nomad 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.

### **How do I use the Trimble Nomad 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 it to settle so that positions are not influenced by the recent movement of the handheld.

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

The Trimble Nomad 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 series?**

The Trimble Nomad 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 series?**

The Trimble Nomad series can connect to applications that accept NMEA messages.

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

The Trimble Nomad series models have integrated Bluetooth wireless technology and integrated 802.11g support (except model 800B) 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 for connecting and synchronizing your device with an office computer, and a USB-host port and audio jack wired for a mono speaker and microphone combination headset. USB-host supports USB human interface devices (for example keyboards, and some barcode scanners) and USB mass storage devices.

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

Trimble Nomad 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 a 802.11g access point. 802.11g is sometimes referred to as wireless Ethernet. A 802.11g connection can be used to connect to the Internet (at broadband speeds) through an 802.11b or 802.11g 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 a 802.11g access point, battery life is shortened.

### **What can I use the Trimble Nomad 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 WAN (Wide Area Network) 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 series cellular modem be used for voice calls?**

No. The modem is for data only and voice calls are not supported.

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

Yes. The Nomad 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 plan and SIM.

### **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.

### **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 the handheld ships with the broadband cellular modem, extended cap, and a customized modem support accessory. This configuration is fully IP67 rugged.

You can use the Trimble Nomad broadband modem with other Trimble Nomad series models by inserting it into the USB host port in the base of the device. This is not recommended as it is a non-rugged configuration.

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

The Trimble Nomad 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 many 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 series has no impact on GPS performance. However, when there is an active connection to another Bluetooth device, battery life is shortened.

### **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. You can use the camera while logging GPS positions with the internal GPS receiver.

### **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 included with the device. 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 symbologies.

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

The Trimble Nomad 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; reduce the backlight brightness.
- Try to avoid using the handheld in very cold conditions ( $-20^{\circ}\text{C}/-4^{\circ}\text{F}$  and below).

## What's in the box?

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

- Power supply with international adaptor kit
- Rechargeable Li-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 series?

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

- Serial interface cable (RGR-A-CNULLCAT)
- Replacement USB data cable (EGL-Z2001)
- 12 V vehicle charger (ST1-Z2003)
- Replacement rechargeable Li-Ion battery (EGL-Z1006)
- Spare battery charger (EGL-Z2012)
- AA Battery module (EGL-Z1001)
- Protective nylon carry case (EGL-Z2003)
- Replacement stylus pen (EGL-Z2013)
- Replacement hand strap (EGL-Z1007)
- Replacement screen protectors, ultra-clear (package of two) (EGL-Z1002)
- AC Charger (ST1-Z2001)
- Vehicle mount (EGL-Z2007)

- USB boot (EGL-Z1004)
- Serial boot (EGL-Z1005)
- Wireless broadband modem (EGL-Z1010)
- Standard CF-Cap (EGL-Z1009)
- Extended CF-Cap (EGL-Z1008)

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

The Trimble Nomad series contains a fully sealed SD slot that you can use with an SD memory card with up to 2 GB capacity. Higher capacity SD cards (SDHC) 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. Non-scanner and/or non-camera models also have a CF 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, Recon or Ranger outdoor rugged handheld computers.