

TDS Nomad 800 Series

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FAQs for Nomad 800 Data Collectors

In this document, “TDS Nomad 800 Series” refers to all models of TDS™ Nomad™ data collectors. Where information refers to one or more specific models, this is clearly indicated.

What is the TDS Nomad 800 Series?

The TDS Nomad 800 Series is an ultra-rugged family of field computers for data collection and mobile field work. The TDS Nomad 800 Series features include an integrated GPS receiver that can provide 2 to 5 meter (HRMS) and an integrated cellular modem. The TDS Nomad 800 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 TDS Nomad 800 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 TDS Nomad 800 Series?

- All-in-one device with powerful hardware. The TDS Nomad 800 Series is built for superior performance in harsh conditions.
- In the Nomad 800X model, the integrated AT&T network compatible cellular modem connects to the Internet for data transfer without tethering to an external modem or mobile phone.
- Integrated Bluetooth wireless technology and optional 802.11g technology provide options for connecting to the Internet and corporate networks to access data and maps, and to send and receive email and instant messages.
- The integrated GPS receiver offers 2 to 5 meter accuracy (WAAS corrected). The integrated GPS receiver is optimized for data collection in harsh GPS conditions.
- The TDS 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.
- 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.
- 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 be recharged.

Note: For information on using and disposing of Li-Ion batteries, refer to the TDS 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.

FAQ Bulletin



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What different configurations are available for the TDS Nomad 800 Series?

The TDS Nomad 800 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
800B	128	512	NUM	SD/CF	●				
	128	512	PDA	SD/CF	●				
800LC	128	1GB	NUM	SD	●	●	●		●
800LD	128	1GB	NUM	SD/USB	●	●	●		
800X	128	2GB	NUM	SD/CF	●	●	●	●	

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 TDS 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, 800LC and 800LD run Windows Mobile 6 Classic, and 800X features 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 TDS 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 TDS Nomad 800 Series?

Yes. When using a TDS 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 TDS Nomad?

A TDS Nomad handheld computer has an integrated GPS receiver. TDS Nomad 800 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 TDS Nomad 800 Series?

The TDS Nomad 800 Series can output the NMEA and SiRF binary protocols.

Can I use an external antenna with my TDS Nomad 800 Series?

The TDS 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.

How do I use the TDS Nomad 800 Series to ensure best performance?

When collecting point features or vertices, TDS 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 TDS Nomad 800 Series perform in harsh GPS conditions?

The TDS 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 TDS Nomad 800 Series?

The TDS 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 TDS Nomad 800 Series?

The TDS Nomad 800 Series can connect to applications that accept NMEA messages.

What connectivity options does the TDS Nomad 800 Series support?

The TDS Nomad 800 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 and the 800LD (with optional Sprint USB modem) 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 TDS Nomad 800 Series' 802.11g capabilities for?

TDS 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 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.

Using the 802.11g radio in a TDS Nomad 800 Series has no impact on GPS performance. However, when there is an active connection to a 802.11g access point, battery life is shortened. *Note: TDS Survey Pro does not support the use of 802.11 for Network RTK.*

What can I use the TDS Nomad 800 Series' cellular modem capabilities for?

The TDS Nomad 800X and 800LD models 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 network RTK surveying with Survey Pro
- 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 TDS Nomad 800X models 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 Nomad 800X is certified for use in the USA, Canada, and Europe.

The Nomad 800X 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.

The TDS 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.

What can I use a TDS Nomad 800 Series' Bluetooth capabilities for?

The TDS 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 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 TDS Nomad 800 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 TDS Nomad 800LC model includes 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.

How is the TDS Nomad 800 Series powered?

The TDS 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, TDS 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).