



Customer FAQs

GEOSPATIAL DIVISION
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TRIMBLE TDC100 SERIES HANDHELDS: FAQs FOR CUSTOMERS

These FAQs cover Trimble® TDC100 handhelds.

- General questions
- Software questions
- GNSS questions
- Cellular modem questions (TDC100 4G model only)
- Other wireless questions
- Camera questions

General Questions

Q. What are TDC100 series handhelds?

A. The Trimble TDC100 series is a range of IP67 rugged, lightweight GNSS handhelds integrating an array of powerful features. Providing photo capture, a high yield GNSS receiver, and integrated 4G LTE cellular modem and voice call capability options* (*4G model), the TDC100 series handhelds are the perfect solution to increase productivity and communication capabilities of your workforce.

There are two models of TDC100 series handhelds:

- The TDC100 Wi-Fi only handheld (#107489-00) has a high-sensitivity GNSS receiver, supporting GPS, GPS plus GLONASS or GPS plus Beidou, with 2 to 5 meter positioning accuracy in real time (using SBAS), Bluetooth® wireless technology and Wireless LAN technology, a built-in 8 Megapixel digital camera, a MicroSD/SDHC storage slot, and is powered by Android 5.1 “Lollipop” mobile operating system.
- The TDC100 4G handheld (#107490-00) has all the capabilities of the TDC100 Wi-Fi handheld and additionally contains a 4G cellular modem for data transfer and voice call capability, more memory, a higher resolution camera and NFC capabilities.

Q. What are the key features of TDC100 series handhelds?

A. All Trimble TDC100 series handhelds offer the following features:

- Integrated digital camera: 8 or 13 Megapixel, autofocus, selectable resolution and video capability.
- High-yield GNSS capability: GPS, GPS plus GLONASS or GPS plus Beidou, complimented by SBAS (WAAS/EGNOS/MSAS) support for 2 to 5 meter accuracy in real-time.

<http://mgispartners.trimble.com>

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- 4G cellular data and voice capability: The Trimble TDC100 4G model’s integrated 4G LTE cellular capability keeps your entire field workforce in contact with the office and the data they need. See the Cellular Modem section of these FAQs for details of the TDC100 handheld’s wireless data, voice call, and SMS capabilities.
- Bluetooth and Wi-Fi connectivity: Use the built-in Wi-Fi connectivity to access secure networks and to get the most up-to-date information. Use the built-in Bluetooth wireless technology to connect the handheld to a variety of Bluetooth-enabled devices like Trimble high accuracy GNSS receivers.
- 8 or 16 GB onboard storage plus a MicroSD slot for removable storage: Take all the background data you need into the field. The maximum capacity of MicroSD/SDHC cards supported is currently 64 GB.
- 1.2 GHz quad-core processor and 2 GB of SDRAM to provide the processing power and memory required to run more applications.
- 2 programmable hardware keys plus on/off and volume up/down keys.
- Android 5.1 “Lollipop” operating system: Includes familiar Google software, giving you the tools you need for a seamless exchange of data between the field and the office. The operating system is available in 10 different languages, selectable by the user.
- 3 Android navigation buttons (soft keys).
- Designed for the field: The handheld is IP67 rugged and protected against water and dust ingress, and comes with an all-day battery, so it works as hard as you do, wherever you work.

Q. How do TDC100 series handhelds differ from a consumer-grade smartphone with GNSS?

A. Trimble TDC100 series handhelds are designed for professional data collection and all-day use in the field. They are IP67 rugged to protect against water and dust penetrating the unit, with covered ports (USB, headset, external antenna) to avoid collecting dirt, and are drop-tested to 1.2 m (4 ft).

Unlike most consumer smartphones, where GNSS performance is a secondary consideration and will often only work when network connectivity is available, the TDC100 series handhelds have been carefully tuned to maximize GNSS and SBAS performance in the field. Finally, most consumer smartphones are designed for occasional GPS use only; their batteries cannot sustain continuous use for a full day’s field work. In contrast, TDC100 series handhelds have replaceable battery options (3100mAh or 4800mAh), allowing for all-day operation.

Q. Are TDC100 series handhelds ruggedized?

A. Trimble TDC100 series handhelds have an IP67 rating and have been designed for ruggedness through:

- *Drop testing:* The device is dropped from 1.2 m (4 ft) on all six sides then tested for operability.
- *Coverings for all openings:* All ports and openings on the handheld have covers—including external GNSS antenna connector, USB port, and headset connector. The memory and SIM card slots are located inside the battery compartment for further protection.

Q. How are TDC100 series handhelds charged and powered?

A. Trimble TDC100 series handhelds are powered by either a standard capacity battery (3100mAh) or a high-capacity (4800mAh) Li-ion battery. This battery can be charged in the unit using the supplied AC adapter. The battery can also be charged overnight when connected to another power source like a computer or USB car charger / 12V to USB vehicle adapter using the USB cable (it will take longer to charge the higher-capacity battery due to the level of power provided over USB).

Q. What can I do to prolong battery charge?

A. The major drains on battery charge are the backlight, the GNSS receiver, the cellular module (TDC100 4G model only) and the Bluetooth and Wi-Fi radios. If you rarely or never use one or more of these features, turning them off will significantly increase battery charge.

Q. Is there an extended warranty for TDC100 series handhelds?

A. Not yet. The Trimble standard hardware warranty period is 36 months. Should a Trimble TDC100 series handheld fail within the 36 month hardware warranty period due to faulty materials or workmanship, the failed handheld will be replaced. Battery covers and port covers/plugs are available as service parts. Batteries and accessories come with a standard 12 month warranty.

Q. Can TDC100 Wi-Fi model be upgraded to include e.g. cellular modem or voice call capability?

A. No. Customers who anticipate requiring cellular modem support or cellular voice call capability in the future should purchase a Trimble TDC100 4G model. Memory, Camera resolution and NFC capability on the Wi-Fi model cannot be upgraded either.

Q. What ships standard in the box?

A. Trimble TDC100 series handheld ship with the following standard parts and accessories:

- Trimble TDC100 series handheld
- AC adapter and outlet connector
- USB cable
- Screen protector
- Wrist strap
- Quick Start Guide

Software Questions

Q. What software applications can I run on a TDC100 series handheld?

A. Android is a mobile operating system (OS) developed by Google, based on a Linux kernel and designed primarily for touchscreen mobile devices such as smartphones and tablets. Android has the largest installed base of all operating systems of any kind.

Google Play (or Google Play Store), is a digital distribution platform operated by Google. It serves as the official app store for the Android operating system, allowing users to browse and download applications developed with the Android SDK and published through Google.

Applications are available through Google Play either free of charge or at a cost. They can be downloaded directly to the TDC100 through the included Play Store mobile app, or by deploying the application to a device from the Google Play website.

According to statistics, there are now over 2 million applications available through Google Play; these include a number of Trimble applications (see a list of Trimble applications for Android [here](#)).

Q. What are the features and benefits of the Android operating system?

A. The benefits of Android OS are numerous and some of the features offered make it a perfect mobile operating system for professional users. Starting with the integrated Google applications and easy access to hundreds of thousands of applications via Google Play, the ability to perform multitasking (Android devices can run many applications, for example using Navigation software to get you to a work site, using data collection software to collect data once you arrived). The Ease of Notification, with missed calls, SMS, or email, there will be a notification on the Home Screen. And finally, the availability of so called “Widgets” on the home screen, that allow for quick information at a glance or easy access to a variety of settings.

Q. Will software applications that were developed for Windows Mobile or Windows Embedded run on the Android operating system?

A. No. Applications developed for Windows Mobile® version 5.0 or Windows® Embedded Handheld 6.5 operating system will not run on Android OS.

Q. Can I change the language used by the TDC100 handheld?

A. Yes; the “Settings” Menu allows you to personalize the language and keyboard language of the device.

You can choose from Afrikaans, German, English (UK/US), Spanish, French, Italian, Portuguese (Portugal/Brazil), Greek, Russian, Korean and Chinese (simplified/traditional).

Q. What versions of Trimble software support TDC100 series handhelds?

A. Trimble TDC100 series handhelds achieve optimal GNSS results when used with the following field software applications:

- Trimble TerraFlex™ software (updated version to support the TDC100 will be available mid-August 2016)

Q. Do TDC100 series handhelds run Esri Collector for ArcGIS software?

A. Yes. With default installation settings, Esri® Collector for ArcGIS® software will detect GNSS spatial data on a Trimble TDC100 series handheld.

GNSS Questions

Q. What GNSS technology is inside the TDC100 series handhelds?

A. Trimble TDC100 series handhelds contain an integrated uBlox Neo-M8T GNSS receiver. Trimble has set the firmware settings to ensure the best possible performance in the field for data collection, and full compatibility with Trimble field and office software.

Q. What GNSS software can I run on TDC100 series handhelds?

A. A wide range of application software is compatible with the Android 5.1 “Lollipop” operating system and spatial data available through the Google “Location Services” API, including many GNSS navigation and data collection applications.

To access spatial data from the internal GNSS receiver of a Trimble TDC100 series handheld, an application must support one or more of:

- Android “Location Services” API
- NMEA-0183 ASCII protocol

Q. How do I ensure the best GNSS performance with TDC100 series handhelds?

A. Trimble TDC100 series handhelds have a tuned GNSS patch antenna located inside and at the top of the device. For optimal GNSS reception, hold the handheld at or close to vertical allowing it visibility of the sky. When collecting point data with a TDC100 series handheld, Trimble recommends that you remain stationary at the point for at least 10 seconds before beginning to log GNSS positions. This allows the GNSS receiver’s internal algorithms to stabilize, and ensures the best possible point feature accuracy.

Q. How do TDC100 series handhelds perform in harsh GNSS conditions?

A. The GNSS receiver in Trimble TDC100 series handhelds is optimized for difficult GNSS environments, helping ensure that you will have a GNSS position even in challenging locations. However you should be aware that in environments where GNSS signals may be blocked or reflect off objects such as buildings, vehicles, or trees, the positional accuracy will significantly degrade. The DGNSS accuracy specification of TDC100 series handhelds applies in open environments with few obstacles to block or reflect GNSS signals.

Q. What real-time correction options are available with TDC100 series handhelds?

A. Trimble TDC100 series handhelds support all three available SBAS correction services (WAAS in North America, EGNOS in Europe, and MSAS in Japan). In open GNSS environments, TDC100 series handhelds typically achieve 2 to 5 meter accuracy using SBAS.

Q. Can I connect a TDC100 series handheld to a higher accuracy GNSS receiver?

A. Yes. Supported receivers include Trimble R1and R2 GNSS receivers. The connection is supported using Bluetooth wireless technology; you will need to enable developer options and Mock locations on the TDC100 device and download the GNSS Status Utility to configure the external Trimble Receiver.

Q. Can I use corrections from a Trimble VRS network over the Internet with the TDC100 Series handheld?

A. No. Trimble TDC100 handhelds only support SBAS corrections. Corrections from a VRS network cannot be applied to the internal GNSS receiver of a TDC100 series handheld.

Q. Can I use an external GNSS antenna with a TDC100 series handheld?

A. Yes. The optional external GNSS antenna may be convenient when using a Trimble TDC100 series handheld in a vehicle (particularly if that vehicle’s windshield has a GNSS-resistant UV coating).

Cellular Modem Questions (TDC100 4G model only)

Caution: Use of the cellular modem data or voice call capability will incur charges which may be fixed (per month) or may be based on the data bandwidth you use. Charges when roaming outside your home network (for example, abroad) are significantly higher than those incurred when on your home network. Please check with your carrier for full details of usage charges, both on their own network and when roaming.

Q. What can I use the TDC100 handheld’s 4G LTE cellular modem connectivity for?

A. The internal 4G broadband cellular modem of the Trimble TDC100 4G model allows you to connect to the Internet or directly to an IP address, using a supported cellular wireless network.

The most common application is to connect to your organization’s network remotely to access work orders, enterprise data, maps, or share data or information from the field.

Other potential applications include:

- Accessing private or publically available Internet sites and services, such as WMS (Web Map Servers) for background maps in the field.
- Tracking each TDC100 handheld by sending GNSS positions periodically to a central location.
- Navigation applications with real-time traffic updates.
- Dynamic work order allocation across a dispersed field workforce.
- Instantly reporting on field conditions in time-critical situations, such as natural disaster management and utility outages.
- Sending and receiving email in the field.
- Receiving real-time corrections from VRS networks for use with a R1 or R2 GNSS receiver for high accuracy GIS data collection.

Q. Can I use the TDC100 4G model cellular connection for Internet sharing?

A. Yes. If supported by your wireless carrier, the internal 4G broadband cellular modem of the Trimble TDC100 4G model allows you to provide tethering or portable hotspot to other devices for Internet access sharing.

Q. Can I make phone calls with the TDC100 series handhelds?

A. Yes, the Trimble TDC100 4G model supports voice calls over the cellular network, or you can also use VOIP (Voice Over Internet Protocol). You can use either the integrated speaker or a wireless (Bluetooth) headset to listen and talk during a call. Note that the Wi-Fi only model does not support voice calls over the cellular network.

Caution: VOIP calls consume a high amount of network bandwidth and might not be cost-effective when compared to regular cellular voice calls.

Q. Can I send and receive text messages with a TDC100 series handheld?

A. Yes, the Trimble TDC100 4G model supports text messaging.

Q. Will using the voice call capability degrade the accuracy of my GNSS data?

A. No, the voice call capability will not degrade the accuracy of your GNSS data. Trimble suggests however that you pause/stop GNSS logging or close the feature before taking a call to avoid moving the GNSS antenna while capturing a feature.

Q. What happens to my Internet connection when I take or make a voice call? Is software still able to send and receive data?

A. The Trimble TDC100 4G model can still send and receive data during a voice call when supported by the wireless carrier. If the wireless carrier does not support this feature, packet data connections are put on hold while you are on a voice call.

Q. Can I use a Bluetooth headset for voice calls?

A. Yes, the Trimble TDC100 4G model is compatible with Bluetooth headsets.

Other Wireless Questions

Q. Do TDC100 series handhelds have a flight mode for use in an aircraft?

A. Yes. The Trimble TDC100 series handhelds have an explicit “Airplane Mode” that can be enabled to turn off the Wi-Fi and Bluetooth radios and the cellular modem in the 4G version. Alternatively, to perform a full power down of the device, press and hold the Power button and select Shutdown.

Q. What can I use the Wi-Fi capabilities of TDC100 series handhelds for?

A. Trimble TDC100 series handhelds have an integrated wireless Local Area Network radio, compliant with IEEE 802.11 b/g, that you can use to receive data anywhere within the range of a wireless LAN access point. Wireless LAN is often referred to as Wi-Fi. There are many publicly available Wi-Fi access points (also known as “hotspots”). To locate nearby access points, use Internet sites such as www.jiwire.com. Using the Wi-Fi radio in a TDC100 series handheld does not impact GNSS performance, but battery power is consumed faster when there is an active connection to an access point.

Q. What can I use the Bluetooth capabilities of TDC100 series handhelds for?

A. Trimble TDC100 series handhelds have an integrated Bluetooth radio that you can use to establish cable-free connections to other Bluetooth devices within a range of 10 meters. Using a Bluetooth wireless connection, you can communicate with Bluetooth-enabled devices such as laser rangefinders, wireless headsets, or barcode scanners. Using the Bluetooth radio in a TDC100 series handheld does not impact GNSS performance, but battery power is consumed faster when there is an active connection to another Bluetooth-enabled device.

Camera Questions

Q. Does the TDC100 series have both a digital front as well as a rear camera?

A. Yes, the Trimble TDC100 series handheld has a 2 MP camera in the front as well as a rear camera with 8 MP (Wi-Fi model) or 13 MP (4G model).

Q. What are the functions of the integrated digital rear camera of TDC100 series handhelds?

A. Trimble TDC100 series handhelds feature an 8 megapixel (Wi-Fi model) or 13 megapixel (4G model) digital camera. Still photos are stored in the JPEG format which is widely readable on all types of computer. Photos can be previewed on a TDC100 series handheld, using the Android “Photos” application.

Video clips can be recorded in either QCIF, VGA, WVGA, SD 480p, HD 720p or HD 1080p resolution, and are stored in phone memory or SD card. Videos can be pre-viewed in the Android “Photos” app.

The camera has built-in geotagging capabilities which allow the user to select if the GNSS location and date is stamped onto the image or stored into the EXIF file header. With this information stored in the file you can easily map your photos or identify where they were taken and the asset they refer to.

Q. Does the integrated camera have a flash (“strobe”)?

A. The Trimble TDC100 handheld does have a camera flash (LED light); in the camera application, you can turn the function off, turn it on or switch it into an automatic mode.

In low light situations, you can also use it as a “flashlight” function by enabling it through “settings”.

Q. Can I use the camera as a barcode reader?

A. There are many 3rd party apps that allow you to use the digital camera of the TDC100 as a barcode scanner, but we do not include a barcode reader app with the device.

Q. Can I take portrait oriented pictures?

A. Yes. The Trimble TDC100 series handhelds have an orientation sensor to distinguish portrait from landscape mode. Simply rotate the device to portrait or landscape orientation when taking photographs and make sure your display settings allow for rotation of the contents of the screen when the device is rotated.

Q. Can I link pictures to GIS features that I am capturing?

A. Yes. You can use Trimble TerraFlex software to control the taking of still photographs. Any photographs initiated from within TerraFlex software are automatically associated with the current GIS feature.

Q. Are the pictures time-, date-, and position-stamped?

A. For all photos captured with the Trimble TDC100 series handheld's camera, the file is automatically time and date-stamped using the handheld's internal clock. Furthermore, if the "Store location" feature has been enabled in the camera app settings, you can geotag photos when they are being taken and have the date and/or GNSS position (decimal degrees) stored in the EXIF header of the file.

If you take a picture using Trimble TerraFlex software, not only is the picture time- and date-stamped, but the TerraFlex software automatically writes the current GNSS position to the picture's EXIF header and creates a link between the image and the feature.

This means the picture can always be identified in space and time, even if it is subsequently separated from the GIS data you were collecting at the time the picture was taken.

Q. Where can I get more information?

A. Go to trimble.com/TDC100 or contact your local Trimble Distributor.