

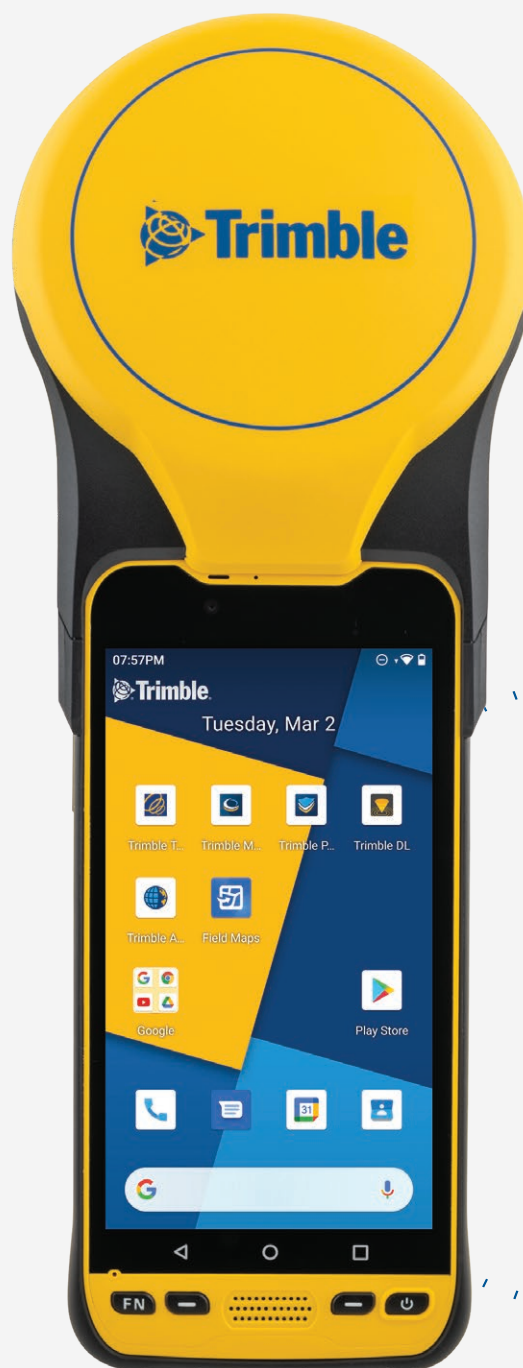
Trimble TDC650

HANDHELD

KEY FEATURES

- ▶ Integrated high-accuracy GNSS receiver
- ▶ Scalable positioning accuracy from meter to centimeters
- ▶ Versatile GNSS corrections support
- ▶ Android™ operating system
- ▶ 6-inch sunlight readable multi-touch capacitive screen
- ▶ Google Mobile™ services certified to run Google core applications and services
- ▶ Compatible with Trimble or third-party software applications
- ▶ High speed 4G LTE cellular data connectivity
- ▶ Ultra-rugged design with MIL-STD-810 certification and rated IP67
- ▶ Removable, all day battery
- ▶ Fast Qualcomm® processor with 4 GB RAM and 64 GB internal storage
- ▶ Ergonomic form factor
- ▶ Front- and rear-facing cameras

Learn more:
geospatial.trimble.com/tdc650



GNSS CHARACTERISTICS

- 240 GNSS channels
 - GPS L1, L2
 - GLONASS L1, L2
 - BeiDou B1, B2
 - Galileo E1, E5b
 - QZSS L1, L2
 - SBAS L1 (WAAS, EGNOS, MSAS, GAGAN)
 - L-band
- Scalable accuracy from meter to centimeter (meter, sub-meter (30/30), decimeter (7/2), centimeter)
- Full utilization of signals from all 6 GNSS systems (GPS, GLONASS, BeiDou, Galileo, QZSS and SBAS)
- Enhanced GNSS-centric algorithm: fully-independent GNSS signal tracking and optimal data processing, including GPS-only, GLONASS-only or BeiDou-only solution (autonomous to full RTK)
- Fast search engine for quick acquisition and re-acquisition of GNSS signals
- Patented SBAS ranging for using SBAS code & carrier observations and orbits in RTK processing
- Patented Strobe™ Correlator for reduced GNSS multi-path
- Supported data formats: ATOM, CMR, CMR+, RTCM 2.1, 2.3, 3.0, 3.1 and 3.2 (including MSM), CMRx and sCMRx
- External antenna connector (TNC)

REAL-TIME ACCURACY (RMS) 1, 2, 3

Meter (SBAS only)

Horizontal	< 7 cm
Vertical	< 90 cm

Sub-Meter

Horizontal	30 cm
Vertical	30 cm

Decimeter

Horizontal	7 cm
Vertical	2 cm

Centimeter

Horizontal	10 mm + 1 ppm
Vertical	15 mm + 1 ppm

Real-Time Performance 4

Instant-RTK Initialization	Typically 2 sec for baselines < 20 km Up to 99.9% reliability
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RTK initialization range over 40 km

Trimble RTX® Positioning 5

FieldPoint RTX	10 cm horizontal Initialization Fast
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PROCESSOR

- Qualcomm Snapdragon™ 626
- Clock frequency: 2.2 GHz

OPERATING SYSTEM

- Android 10 (Google certified)6
- Software package includes: Google Mobile Services

COMMUNICATIONS

- Cellular: GSM (850,900,1800,1900), WCDMA (B1, B2, B5, B8), LTE-FDD (B1, B2, B3, B4, B5, B7, B8, B12, B13, B17, B20, B25, B28), LTE-TDD (B38/B39/B40/B41), TD-SCDMA (B34, B39)
- NanoSIM x2
- Wi-Fi (IEEE) 802.11 a/b/g/n/ac
- Bluetooth 4.1
- NFC (13.56 MHz)
- USB 3.0 (Type C)

MEMORY

- 4 GB SDRAM
- Storage: 64 GB (non volatile).
- microSDXC™ memory card (up to 256 GB)

ENVIRONMENTAL CHARACTERISTICS

Operating temperature	-20 °C to +55 °C (-4 °F to 131 °F)7,8
Storage temperature	-40 °C to +70 °C without battery (-40 °F to 158 °F)9
Humidity	5% to 90% RH, non-condensing according to MIL-STD-810H 507.6
Water & dust proof	IP67 (IEC 60529)
Salt fog	MIL-STD-810H method 509.7
Free drop	1.2 m (39 ft), 10 drops on concrete
Shocks	MIL-STD-810G (fig 516.6-10 Procedure I)
Vibration	MIL-STD-810G (fig 514.6C1-Cat4)
Altitude	MIL-STD-810G-2014 method 500.5

POWER CHARACTERISTICS

Battery	Li-Ion, 8000mAh
Battery life	8 hrs @ 20 °C (68 °F) with GNSS on10
Charging time	4 hours (removable battery)

PHYSICAL CHARACTERISTICS

Size	30.6 x 12.2 x 4.7 cm (12 x 4.8 x 1.8 in)
Weight	790 g (1.74 lb)
User interface	2 volume keys, on/off/reset key, 4 programmable keys, standard 3 button Android touch panel

On screen keyboard display

Size	6.0" capacitive multi touch
Resolution	1920x1080 pixels
Brightness	450 Cd/m2
Panda Glass 3 damage-resistant	
Auto rotate	between Portrait and Landscape

MULTIMEDIA & SENSORS

- Rear camera: 13 MP pixels with auto-focus and LED flash
- Front camera: 5 MP pixels with fixed focus
- E-Compass
- Gyrometer
- Accelerometer
- Ambient light sensor
- Barometer
- Speaker
- Microphone
- Light sensor

STANDARD ACCESSORIES

- Handstrap
- Screen protectors (x2)
- A/C charger
- USB cable
- Pouch
- Battery door opener
- Monopole adaptor

OPTIONAL ACCESSORIES

- External GNSS antenna
- Pole bracket
- Monopole
- Dual-battery charger

OPERATING MODES

- RTK rover: Direct IP, NTRIP (VRS, FKP, MAC networks)
- Post-processing (if supported by the field application)
- Trimble RTX IP or Satellite (both exhibit excessive power consumption)

FIELD SOFTWARE

- Trimble TerraFlex™
- Trimble Penmap® for Android
- Trimble Access™
- Third-party Android applications

- 1 Accuracy and TTFF specifications may be affected by atmospheric conditions, signal multipath, obstructions, satellite geometry and conditions availability and quality. Always follow recommended GNSS data collection practices.
- 2 Performance values assume minimum of five satellites, following the procedures recommended in the product manual. High multipath areas, high PDOP values and periods of severe atmospheric conditions may degrade performance. Except for Meter (SBAS only), real time accuracies require RTK corrections.
- 3 RMS performance based on repeatable in field measurements. Achievable accuracy and initialization time may vary based on type and capability of receiver and antenna, user's geographic location and atmospheric activity, scintillation levels, GNSS constellation health and availability, and level of multipath including obstructions such as large trees and buildings.
- 4 Receiver initialization time varies based on GNSS constellation health, level of multipath, and proximity to obstructions such as large trees and buildings.
- 5 Long baselines, long occupations, precise ephemeris used. RTX on TDC650 is not supported outside RTX Fast areas (<https://positioningservices.trimble.com/resources/coverage-maps/>).
- 6 Android security updates provided until December 2024.
- 7 Internal batteries are rated from -20 °C to +48 °C.
- 8 At very high temperatures, UHF module should not be used in the transmitter mode. With UHF transmitter on radiating 2W of RF power, the operating temperature is limited to +55 °C (+131 °F).
- 9 Without batteries. Batteries can be stored up to +70 °C.
- 10 Screen brightness at factory default (62%).

Specifications are subject to change without notice.

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