



# Introducing the TSC510 Trimble Survey Controller

Dealer webinar - July 2025

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# Overview

Boost your field efficiency with the Trimble® TSC510 controller.

Designed for optimal performance, this robust handheld device is built to streamline your data collection and surveying tasks. Its intuitive interface and powerful processing capabilities ensure accuracy and speed, even on complex projects. With a focus on durability and connectivity, the TSC510 is equipped to handle challenging environments while keeping your team connected through various communication options.





# Connect to a better way to work

The **Trimble TSC510** retains the beloved features of the original TSC5—like its full keyboard, 5-inch screen, ergonomic form factor, and all-day battery life—while offering significant enhancements.

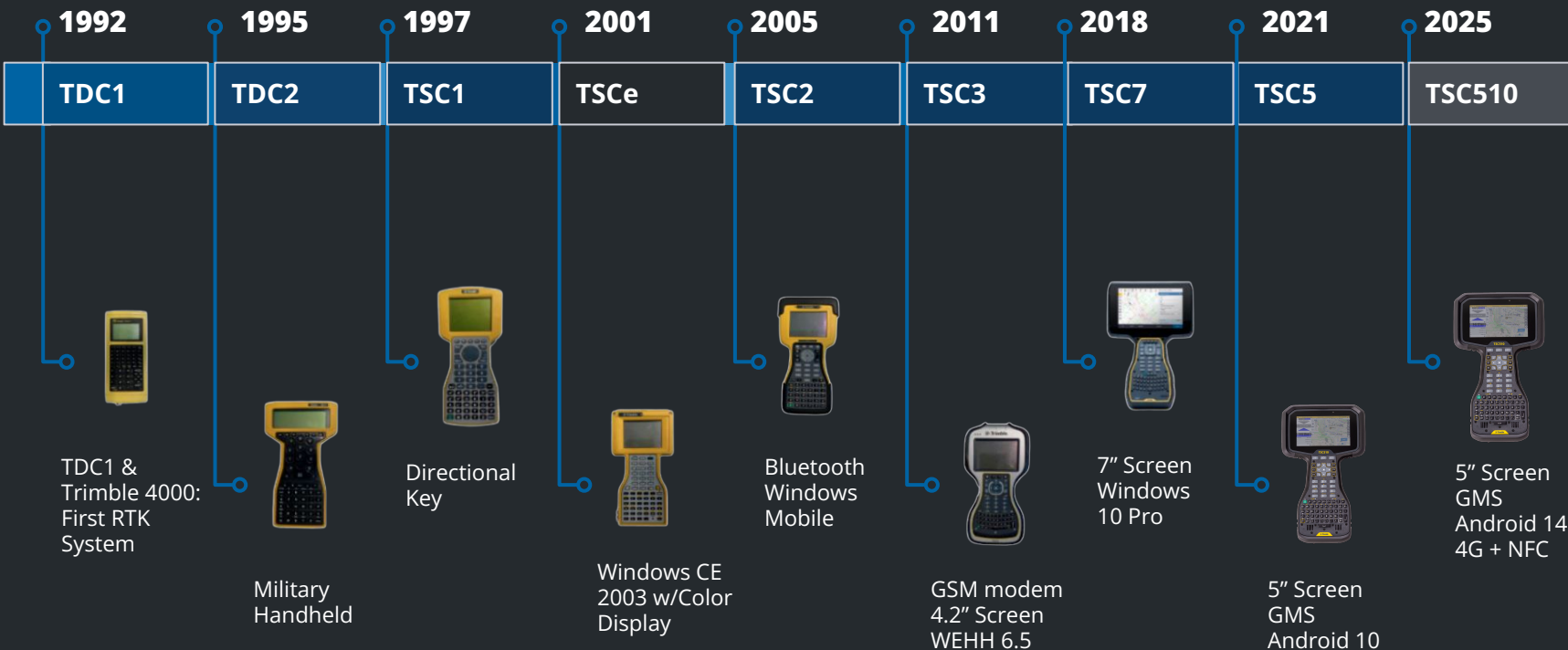
It's an update with an improved, 3x faster processor, enhanced IP68 rating, and the convenience of Android Quick Share.

This makes working with complex data and managing projects faster, more efficient, and more reliable than ever before. It's functional, rugged, fit for purpose, and practical, ensuring it will finish a day's work without failing, breaking, or losing data.





# The TSC continuum: 33 year legacy





# Get to work immediately with this fully connected, powered-up, and rugged solution

## Powerful

- Qualcomm QCS6490 processor
- Three times faster than the previous processor in the TSC5

## Lightweight

- 980 grams

## Android 14 operating system

- (GMS) Google Mobile Services
- Play Store, Google Maps, Gmail, etc

## Battery life





# Summary Features

- Android 14 operating system
  - Upgradable
- 8 GB RAM, 128 GB storage
- Supplemental, hot swappable Li-ion battery
- Supports all constellations
  - GPS, GLONASS, Galileo, BeiDou, QZSS,
- Touchscreen Display - Finger, Stylus
- Rear camera: 16 MP with autofocus and LED flash
- IP68 rating
- MIL-STD-810 GH
- Programmable function keys
- 2 Year Warranty HW Included





# 02

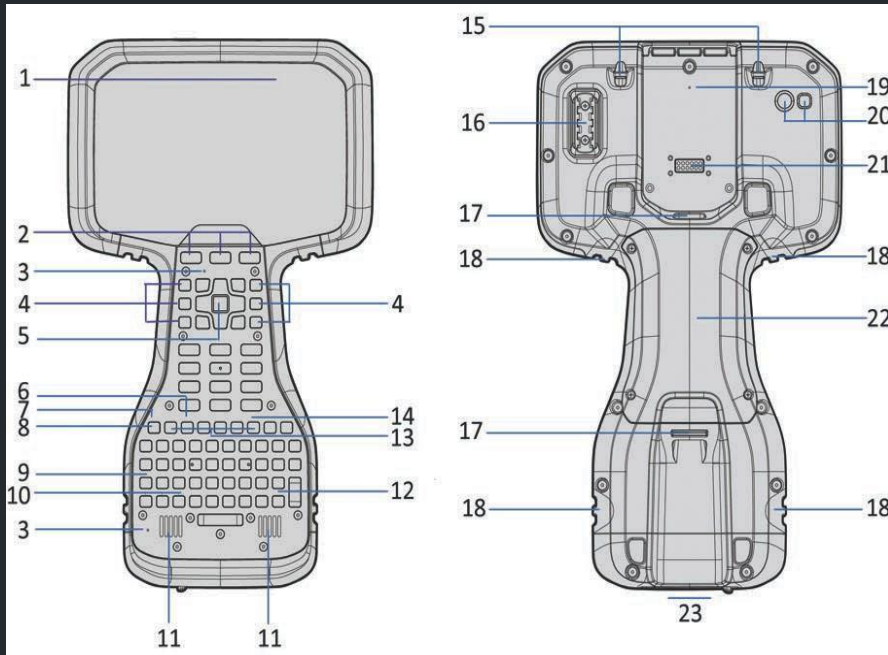
## TSC510 vs TSC5 comparison





	<b>TSC5</b>	<b>TSC510</b>
<b>Memory</b>	4 GB	8 GB
<b>OS</b>	Android 13	Android 14 (upgradable)
<b>Battery Life</b>	>8 hours	>8 hours
<b>Weight</b>	950 g	987 g
<b>IP Rating</b>	IP65	IP68
<b>Processor</b>	Qualcomm 660	2.7 GHz Qualcomm 6490
<b>Storage</b>	64 GB	128 GB
<b>Charge Time</b>	3 hours	3 hours
<b>I/O</b>	USBc	USBc
<b>WWAN</b>	LTE	LTE (upgraded module)
<b>BT std</b>	5.1	Bluetooth 5.2, BLE 5, Class 1
<b>Camera</b>	16 MP	16 MP (autofocus)
<b>MIL- STD</b>	810-H	810-H
<b>EMPOWER</b>	1 Bay	1 Bay
<b>Amar Battery</b>	Yes	Yes
<b>NFC</b>	No	Yes





# TSC510 detailed diagram

- |  |   |
|--|---|
| <b>1</b> Ambient light sensor                  | <b>13</b> Function Keys (F7 - F12)                      |
| <b>2</b> Android keys                          | <b>14</b> Cursor lock LED                               |
| <b>3</b> Microphone (x2)                       | <b>15</b> Stylus tether points                          |
| <b>4</b> Function keys (F1 - F3, F4 - F6)      | <b>16</b> Stylus holder                                 |
| <b>5</b> OK and directional keys               | <b>17</b> Pole mount latches (x2)                       |
| <b>6</b> CAPS lock LED                         | <b>18</b> Handstrap connector points (x4)               |
| <b>7</b> Battery charging LED                  | <b>19</b> Gore Vent: <b>DO NOT COVER!</b>               |
| <b>8</b> Power key                             | <b>20</b> Camera & camera flash                         |
| <b>9</b> Shift LED                             | <b>21</b> Trimble Empower module bay                    |
| <b>10</b> LEDs left to right; Fn, Ctrl, Search | <b>22</b> Cover for battery pack & SIM card slot        |
| <b>11</b> Speakers (x2)                        | <b>23</b> USB-C port, bottom of device under port cover |
| <b>12</b> AGr LED                              | <b>24</b> NFC   |





# 03

## Features





# Communication

## WWAN:

- Sierra Wireless EM7590, Worldwide LTE 4G & UMTS 3G in regions where it is available. AT&T and Verizon certified.
- NanoSIM card.

## Wi-Fi:

- Wi-Fi® 6, 2.4 GHz (802.11 b/g/n/ax) & 5.0 GHz (802.11 a/n/ac/ax)

## Bluetooth:

- Bluetooth® 5.2, BLE 5, Class 1

## Near Field Coms:

- NFC NXP PN-7160, Reader/Writer Mode



# Integrated sensors

- 6-axis accelerometer
- Magnetic sensor
- Ambient light sensor
- SAR sensor
- Compass







# GNSS

- Integrated Sierra Wireless EM7590
- Dual Frequency L1 C/A, GPS, GLONASS, BeiDou, Galileo, QZSS
- 4M Horizontal RMS in favorable conditions





# Physical

## Camera:

- Rear camera: 16 MP auto-focus with LED flash

## Display:

- 5" landscape HD
- 800 cd/m<sup>2</sup> sunlight readable LED backlight, projective capacitive multi-touch touchscreen with stylus, finger, and glove modes

## Keyboard:

- International backlit alpha-numeric and QWERTY with Fn keys (11 physical + multiple Fn, Shift & AGr key combinations)

## Audio:

- Mono speaker and dual microphones with noise-canceling technology





# Environmental specifications (MIL-STD-810H)

## Operating temperature:

- -30 °C to +60 °C (-22 °F to +140 °F)

## Storage temperature:

- -40 °C to +70 °C (-40 °F to +158 °F)

## AC adapter / charging temperature:

- 0 °C to +45 °C (32 °F to 113 °F)

## Dust IP6x:

- 8 hours with blowing talcum powder (IEC-529)

## Water IPx8:

- Immersion, up to 1 m (3.2 ft) depth for 2 hours (IEC-529)

## Transit Drop:

- Procedure IV 26 drops (each face, edge & corner) at room temperature from 1.22 m (4 ft) onto plywood and concrete 6 faces at low and high temps (-30 °C and +60 °C) (-22 °F and +140 °F) Ball drop similar to IEC 60950-1, 50 mm steel ball dropped 0.5 m on touch panel only—5 drops, center and 4 corners

## Humidity:

- 90% RH temp cycle 30 °C / 60 °C (86 °F / 140 °F)

## Vibration:

- General minimum integrity and loose cargo test





# Environmental specifications continued

## Altitude (low pressure):

- Procedures I (storage), II (operating) & III (rapid decompression) Operational at 9,144 m (30,000 ft) at 5 °C / 41 °F Storage at 12,192 m (40,000 ft) at -30 °C / -22 °F Rapid decompression 2,438m (8,000 ft) to 12,192 m (40,000 ft) in <15 seconds at 25 °C / 77 °F

## Temperature shock:

- Survives cycles between -30 °C and +60 °C (-22 °F and +140 °F)

## Solar exposure:

- Survives prolonged solar exposure

## Salt spray:

- ASTM B117 5% salt solution, 96 hrs







# Battery

## Batteries:

- Internal Li-Ion 4600 mAh/7.2 V nominal capacity with optional user replaceable Li-Ion battery pack

## Battery life:

- RTS usage 16 hours or GNSS RTK usage 18 hours (Depending on display settings, connectivity, data processing, ambient temperature, etc.)

## Charging time:

- Full-charge 3.5 hours, 0-50 % charge in 1.5 hours

## Power input:

- USB Type-C, PD 2.0 compliant: 5V, 9V, 12V / 3A charging

## Notification LED:

- Battery status, Shift, Fn, Ctrl, AGr, Caps Lock, Search, and Cursor Lock LED indicator





# Optional removable battery

## Trimble Li-35 user replaceable Lithium-ion battery pack

- Nearly doubles the battery life
- Updated Li-35 is compatible with TSC510 and future TSCs
- Older batteries are not compatible with TSC510
  - Ridge/Grip design on the sides will not allow an older battery to be installed
- USB-C port for convenient charging
- Designed for use only in specified Trimble and Spectra Geospatial® products
- Can be charged by host devices without needing to be removed
- Features:
  - LED Status Indicator
  - Grip and alignment features
  - Power/Communications interface for host device





# 04

## Operating system & Cyber security





# TSC510 operating system

android 

- Android 14 - Upgradeable
- The Trimble OS is **GMS (Google Mobile Services) certified** which means that Google has certified the OS/Hardware combination, and provide standardized, enterprise grade features and expertise
- We have an agreement with Google to provide OS security updates no older than 90 days
  - Security Updates are deployed to devices from the Google Over the Air (GOTA) server - over WiFi or WWAN
  - Trimble Installation Manager (TIM) is used to update Trimble software like Trimble Access
- The processor determines if we can update to newer versions of Android





# Security

- Secure boot with hardware fuse protection
- Qualcomm® Trusted Execution Environment (QTEE)
- Device encryption
- Camera security -  
Hardware-based camera  
biometrics protects against  
malware attacks





# Cyber security - FAQs

Trimble sends updates to the device  
~every 90 days

## Do I ever need to install the Trimble OS Build?

- No! The latest OS is included and comes standard on your device, there is no separate file to download/install.

## Do I have to do anything special to keep my device updated?

- No! Updates are sent directly to your device
- OS Updates will not overwrite your data.

## How often do I need to update my device?

- You'll get a notice to update the OS once a quarter.





# Android additions

- Android Quick Share:  
Send/receive files from nearby devices
- Custom Trimble Data Transfer App: Seamless file sharing
- Team Viewer Support

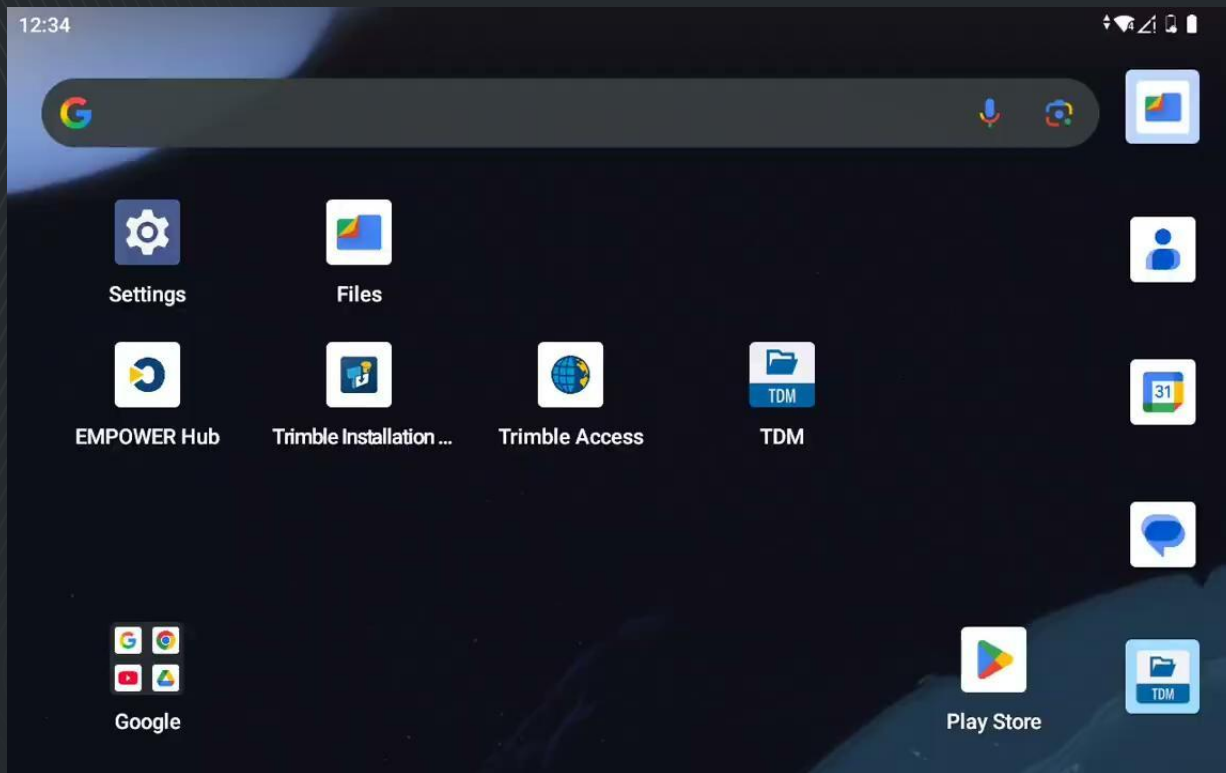




# Android Quick Share

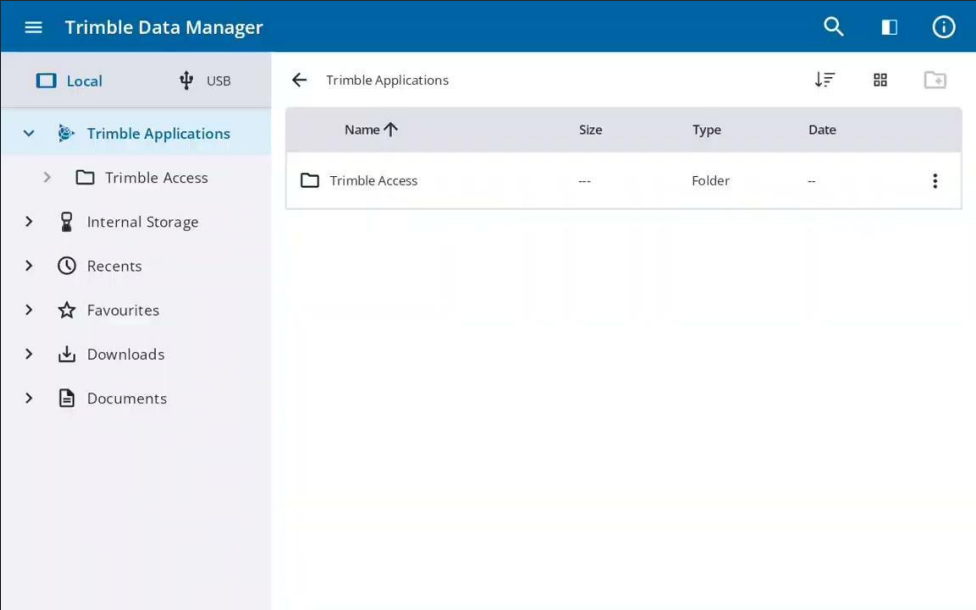
- Use Bluetooth and WiFi Direct
- Direct connection for fast file sharing
- Can send files to multiple nearby devices simultaneously without compressing the data
- Android devices, Chromebooks, and some Windows devices depending on the OS







# Trimble Data Manager





# 05

## Data plans





# Trimble/DAC data subscription plan

- Multi-network SIM in North America ONLY
  - 3 carriers (AT&T, Verizon, and Tmobile) on ONE SIM card
  - 3 Carriers in Canada (Telus, Rogers, Bell)
- Seamless connectivity in a dynamic environment
- Solves customer connectivity pain points
  - Plug and play solution
- Dedicated support
- Purchase through Virtual Warehouse
- Webinar available





# Field testing data collectors results

## Customer benefits



### Productivity

Seamless network switching for continuous connectivity, a wider coverage area and reduces dependency on a single network provider

Real - time data access improves collaboration and decision making

Remote support



### Simplify

Single SIM solution eliminates the need for multiple network SIMs / devices (hot spots)

Cost efficiency and simplification of device management



Ease of use - automatic network selection reduces need for manual intervention by customers allowing them to focus on their work



# Trimble Mobile Computing OS and Firmware Download Portal


mcs.trimble.com

- Release notes, links to latest version, links to BIOS updates, notes.

  OS, BIOS & Firmware Download Portal

Downloads for Handhelds, Tablets, Controllers/Data Collectors and Empower™ modules January 15th, 2023 10:05 UTC

Data Collectors

Product	Component	Latest Version	Release Notes	Notes
<b>TSC7 / Ranger 7</b> 	BIOS	<a href="#">TSC7/Ranger 7 BIOS X77/HB15 Installer</a>	X77: * Enhanced Audio Support * Updated BIOS Product Identification Information HB15: * TSC7 v2 initial release	* <a href="#">Installation Instructions (.pdf)</a>
	Windows 10 Operating System	<a href="#">TSC7/Ranger 7 22H2/LTSC 2021 Production OS Image (10.5 GB): August 2023 Update</a>	* Based on Windows 10 22H2 or Windows 10 LTSC 2021 * Security updates to August 2023 * Support for TSC7 v2	* <a href="#">Installation Instructions (.pdf)</a>
	TSC7/Ranger 7 Driver Package	<a href="#">TSC7/Ranger 7 22H2 Driver Package (1.2 GB)</a>	Suitable for installing individual drivers on to a running device Can also be used for custom OS creation <b>Not required by most uses</b>	



# 06

## Supported hardware/software





# TSC510 supported software

- Trimble Access™ survey software
- Trimble TerraFlex® software
- Trimble Siteworks construction software
- Trimble Forensics Capture software
- Android-based 3<sup>rd</sup> party apps





# TSC510 supported hardware

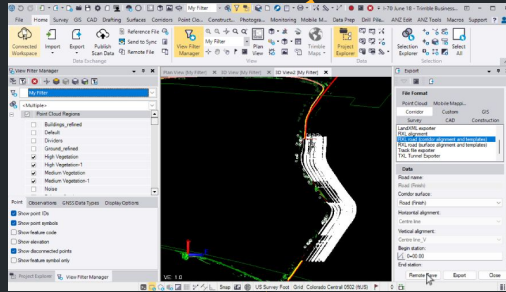
- Supports all GNSS Systems
- All legacy and future Empower modules
- Supports all Mechanical Total Stations
- Supports all Robotic Total Stations







# Connect to a better way to work



## **TSC510 accessories**

# Standard accessories in packout

- x1 screen protector
- x1 USB-C cable
- X1 stylus and 2 tips
- X1 carrying case
- X1 hand Strap



# TSC510 accessories

## Optional accessories

- **Universal USB-C 65w wall charger**
- Pole bracket
- Pole clamp
- Li-35v2 and newer batteries
- Shoulder sling
- Screen protector
- USB port dust cover
- Handstrap
- Stylus
- Carrying case
- USBc to USBc cable
- Replacement stylus tips
- Carry case



# TSC510 parts & pricing



Part Number	Description	Channel
TSC510-1-1100-00	Trimble TSC510 controller - QWERTY keypad, WWAN, Worldwide region, Standalone	<b>Geospatial</b>
TSC510-1-1100-00-HH	Trimble TSC510 controller - QWERTY keypad, WWAN, Worldwide region, Standalone	<b>Construction</b>

All accessories remain the same as the TSC5



# 07

## Compliance/launch plan







# Market compliance update

Tier	Country	Project Ready Date
Tier 1	EU, UK, GMS, ANZ, Canada	Complete
	PTCRB/GSM, US	Complete
Tier 2	US GSA	
	Taiwan, UAE, Saudi Arabia, South Korea, Japan	End of Aug
	South Africa, Mexico	Mid of Nov
	India, India Battery (BIS), Brazil	End of Sep

Environmental



Cyber Security



Data Protection

N/A

Regulatory



# TSC510 Launch

## Dealer marketing tools

- Recorded webinar
- Dealer-only sales documents
- Release overview, messaging & assets
- Spec Sheet and info sheet
- Studio and application images
- Dealer marcom assets

## Public announcement

- Web page
- Social posts
- Post launch activities



# Help QR code

<https://hardwarehelp.trimble.com>





# Conclusion

The TSC510 is ideal for pragmatic customers—from small, single-crew firms to larger organizations—who value proven technology, functionality, and ruggedness at a competitive price point, without sacrificing performance.



For Questions  
or Feedback  
please contact:  
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