SPEC SHEET

Trimble TSC510

CONTROLLER

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

Connect to a better way to work

Faster

Enhanced processing power delivers faster job completion and improved energy efficiency, making the Trimble® TSC510 controller ideal for on-the-go productivity.

Manage projects of any scale, from initial data capture to final office processing. With accelerated handling, you can quickly capture, process, and transfer even the largest files, keeping your workflow seamless and eliminating frustrating delays.

Connected

Constantly connected options include Wi-Fi®, 4G WWAN, Bluetooth® classic and BLE.

Utilize Android™ Quickshare, which allows the user to send and receive files from devices close to device locations such as Android devices, Chromebooks, and some Windows® PCs.

Stay connected and ahead of schedule by leveraging Trimble Connect® cloud software or WorksManager software for data sharing or using a local base station with Trimble's base station service.

Productive

All-day battery life with hot swappable supplemental battery option.

Unlock peak efficiency by leveraging Trimble Connect or WorksManager's on-the-go information management, empowering you to make data-driven decisions and work smarter.

Secure your field data with confidence. The TSC510's advanced security keeps your information readily available, all within a military-spec design that's also IP68 rated for ultimate resilience.

Trimble

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Physical specifications	
Size	287 mm × 175.4 mm × 38 mm - 11.3" x 6.9" x 1.5" (L × W × H)
Weight	987 g excluding optional removable battery, Trimble Empower™ module, pole bracket and other accessories
Housing	SABIC EXL 9330 7T1A5204 + TPU-TEXIN 990
ENVIRONMENTAL SPECIFICATIONS (MEETS OR EXCEEDS)	
Operating temperature	MIL-STD-810H, Method 501.7 & 502.7, Procedure II -30 °C to +60 °C (-22 °F to +140 °F)
Storage temperature	MIL-STD-810H, Method 501.7 & 502.7, Procedure I -40 °C to +70 °C (-40 °F to +158 °F)
Startup temperature	-20 °C to +60 °C (-4 °F to +140 °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	MIL-STD-810H, Method 516.8, 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	MIL-STD-810H, Method 507.6 Procedure II 90% RH temp cycle 30 °C / 60 °C (86 °F / 140 °F)
Vibration	MIL-STD-810H, Method 514.8 Procedures I & II General minimum integrity and loose cargo test
Altitude (Low pressure)	MIL-STD-810H, Method 500.6, 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	MIL-STD-810H, Method 503.7, Procedure I-C Survives cycles between -30 ºC and +60 ºC (-22 ºF and +140 ºF)
Solar exposure	MIL-STD-810H, Method 505.7, Procedures I & II Survives prolonged solar exposure
Salt spray	ASTM B117 5% salt solution, 96 hrs

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Electrical specifications

Processor	Qualcomm QCS6490
Memory	8 GB LPDDR
Storage	128 GB UFS Flash Memory
Operating system	Android 14
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
Display	5" landscape HD (1280x720 px) 365 nits display 295 DPI 800 cd/m² 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
I/O	Single USB Type-C port for charging and data transfer Supports USB PD 2.0 charging (5V, 9V, 12V / 3A) and USB 3.2 (gen1) 5Gbps data rate, display port alt mode via USB Type-C
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 comms	NFC NXP PN-7160, Reader/Writer Mode
Camera	Rear camera: 16 MP auto-focus with LED flash
GNSS	Integrated Sierra Wireless EM7590 | Dual Frequency L1 C/A, GPS, GLONASS, BeiDou, Galileo, QZSS | 4M Horizontal RMS in favorable conditions
Integrated sensors	6-axis accelerometer Magnetic sensor Ambient light sensor SAR sensor Compass

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Security	
	Secure boot with hardware fuse protection Qualcomm® Trusted Execution Environment (QTEE) Device encryption Quarterly Android security patches

Configurations	
	Empower Module support 1 x module bay supports EM120, EM130 & EM940/450 radio modules

Certifications	
Country certifications	Australia, Brazil, Canada, Chile, EU, India, Japan, Kazakhstan, Mexico, New Zealand, Saudi Arabia, South Africa, South Korea, Taiwan, Thailand, UAE, UK and USA
Environmental	Conflict Minerals, EU RoHS 2.0, EU REACH COMPATIBLE

Compatible software	
	Trimble Access™ field software or Siteworks software version 1.80 and later
	Trimble Connect cloud software or WorksManager software
	Android 14 applications

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