RANGER 710



DATASHEET

Powerful processing power engineered to consume less battery energy.

Large 7-inch multi-touch screen offering clear visibility for maps and form data.

Ergonomic design, easy to carry and transport due to its compact and lightweight build.

Full communications capability, 5G WWAN, Wi-Fi®, Bluetooth®, NFC, plus various long range radios via Trimble® Empower™ modules.

Military-spec rugged design, IP68 rated.

Your reliable partner, every step of the way

The Spectra Geospatial® Ranger 710 data collector empowers you to achieve faster, more cost-effective surveying results. Its compact, lightweight, and robust design is built for demanding field conditions. A bright, sunlight-readable 7" display and comprehensive keyboard ensure easy operation, even in challenging environments. Powerful processing and an adaptable, user-friendly design make the Ranger 710 the essential tool for professionals who demand performance. Combined with Origin field software, it streamlines your workflow and helps you handle any project with ease.

- **Screen size**: It's not just about showing a bigger map; it's about seeing results and making decisions.
- **Full keyboard**: It's about getting that data input quickly and error free. The backlit QWERTY keyboard and full numeric keypad are designed for just that.
- **Rugged and reliable**: The Ranger 710 is designed tough for full day productivity.
- **Enables productivity**: The screen, keyboard, toughness, solid pole bracket, hot-swappable batteries, and industry leading software like Origin field software, all combined with high-quality Spectra Geospatial instruments means you get the most out of your money. Quality results are what you produce.

SPECTRA GEOSPATIAL®

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RANGER 710 DATA COLLECTOR

PHYSICAL SPECIFICATIONS

Size (H×W×D)
- 305.2 mm × 193.0 mm × 47.3 mm (12.0" × 7.6" × 1.6")

Weight
- 1270 g (2.8 lbs) excluding optional removable battery, Trimble Empower module, pole bracket and other accessories

Housing
- Sabic LNP D351+ BASF 1170A11U overmold

ENVIRONMENTAL CHARACTERISTICS

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

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

CONFIGURATIONS
- Trimble Empower module support
- 2 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 field software
- Spectra Origin field software
- Android 14 applications

ELECTRICAL SPECIFICATIONS

Processor
- Qualcomm QCS6490

Memory
- LPDDR4 8GB GB

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 10 hours or GNSS RTK usage 10 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
- 5 V/9 V/12 V (3 A) charging, USB-PD 2.0 compliant with Type C connector

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

Display
- 7" landscape HD (1280x800 px) 215 DPI display 800 cd/m^2 nits 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

External speaker / microphone
- USB-C or Bluetooth headsets supported

I/O
- USB-C for charging and USB 3.1 Gen 1 data transfer USB-PD 2.0 supports charger inputs up to 5 V, 9 V, 12 V / 3 A Display port alternate mode via USB Type-C

WWAN
- 5G, worldwide LTE 4G & UMTS 3G in regions where it is available
- AT&T and Verizon certified. NanoSIM card.
- WLAN Wi-Fi 6, 2.4 GHz (802.11 b/g/n/ax) & 5.0 GHz (802.11 a/n/ac/ax)

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 EM9291 | Dual Frequency L1 C/A, GPS, GLONASS, BeiDou, Galileo, QZSS | 4M Horizontal RMS in favorable conditions

Sensors
- Ambient light sensor, e-Compass, accelerometer, gyro sensor, temperature sensors, power/current sensor

CONTACT INFORMATION:

Americas
10368 Westmoor Drive
Westminster, CO 80021 • USA
+1-720-587-4700 Phone
888-477-7516 (Toll Free in USA)

Europe, Middle East and Africa
Rue Thomas Edison
ZAC de la Fleuriaye – CS 60433
44474 Carquefou (Nantes) • FRANCE
+33-(0)2-28-09-38-00 Phone

Asia-Pacific
80 Marine Parade Road
#22-06, Parkway Parade
Singapore 449269 • SINGAPORE
+65-6348-2212 Phone

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