

# 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.

## 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 °C and +60 °C (-22 °F and +140 °F)

### 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<sup>2</sup> 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

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