RANGER 5

DATASHEET

Backlit international alphanumeric keypad

5-inch touchscreen

All day battery

IP65 and MIL-STD-810H rated

Android 10 GMS

Built-in Bluetooth, Wi-Fi, GNSS, worldwide WWAN, Verizon and AT&T certified (US carriers)

One EMPOWER Module bay

13 MP Rear Facing Camera

Ranger 5, Right for You, Right for your Job

The Spectra Geospatial Ranger 5 is the fifth-generation with a heritage that traces back to the first modern field computer for land surveyors. From the beginning, the Ranger has been designed to help you get every job done consistently, efficiently-and right.

This hard working, Android-based survey field data collector is built to handle a full range of tasks thanks to many unparalleled features:

- Backlit international alphanumeric QWERTY keypad enables fast and efficient data entry, even in tough conditions
- Ergonomic design, lighter weight and easy to grip means less onsite fatigue
- Brightly lit, anti-glare screen is easy to use and helps you get more done even in high glare and low light conditions
- All day battery, backed up by a removable battery option helps you power through the day
- Rugged and reliable, IP65 and MIL-STD-810H rated, means it comes into its own in tough environments withstanding shock, dust and water
- Featuring an Android 10 GMS (Google Mobile Services) certified operating system and Qualcomm processor, the Ranger 5 is fast and efficient with a familiar OS
- Built-in Bluetooth, Wi-Fi, GNSS, worldwide WWAN, and a rear facing camera, make it easy to capture videos and images, send and receive data and access the Internet.
- One EMPOWER Module bay provides expansion with the EM120 (Long Range Radio), EM100 (GNSS), and EM11X family (RFID/Barcode readers)

Whether your day calls for precision field data collection or stakeout and layout, you can depend on the Ranger 5 to get the job done.

SPECTRA GEOSPATIAL

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RANGER 5

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PHYSICAL SPECIFICATIONS
- Size
  - 287.1 mm x 175.6 mm x 43.9 mm (11.3" x 6.9" x 1.7")
- Weight
  - 934 g (2.06 lb) excluding optional removable battery, EMPOWER module, pole bracket and other accessories
- Housing
  - PC-EXL9330 case with TPU-Texin990 overmold

ENVIRONMENTAL SPECIFICATIONS

Meet or exceed
- 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 +40 °C (32 °F to 104 °F)
- Dust
  - IP6x: 8 hours with blowing talcum powder (IEC 60529)
- Water
  - IPx5: Water Jet 6.3 mm diameter @ 3 minute, 12.5 liter/minute (IEC 60529)
- 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 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
- 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 °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
- Application security, hardware token, Qualcomm® processor security, hardware backed encryption, storage encryption, TLS 1.3, platform hardening, quarterly Android security patches.

CONFIGURATIONS
- EMPOWER module support
  - 1 x module bay supports EM100 GNSS radio module, EM120 2.4 GHz receiver module, EM11x barcode/RFID modules, and more

CERTIFICATIONS
- Country certifications
  - Australia, Brazil, Canada, China, EU, India, Japan, Mexico, New Zealand, Russia, South Africa, South Korea, Taiwan, Thailand, UAE United Arab Emirates, UK and USA.
- Environmental
  - Conflict Minerals, China RoHS 2.0, EU RoHS 2.0, EU REACH

COMPATIBLE FIELD SOFTWARE
- Origin
- Origin Lite

ELECTRICAL SPECIFICATIONS
- Processor
  - Qualcomm SDA660
- Memory
  - 4 GB LPDDR4X RAM
- Storage
  - 64 GB Flash eMMC
- Operating System
  - Android 10
- Batteries
  - Internal Li-Ion 4530mAh/7.2 V nominal capacity 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.)
  - Fully charged battery can support sleep state for 7.2 days and off for more than 175 days
- Charging time
  - Full-charge 3.5 hours, 0–50 % charge in 1.5 hours
- Power input
  - 5 V/9 V 3A charging, USB-PD compliant with Type C connector
- Notification LED
  - Battery status, Shift, Fn, Ctrl, AGr, Caps Lock, Search, and Cursor Lock LED indicator
- Display
  - 5" landscape HD (1280x720) 300 DPI transflective type TFT Display, 365 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 (12 physical + multiple Fn, Shift & AGr key combinations)
- Audio
  - 1 W mono speaker and dual microphones with noise cancelling technology
- External speaker/ microphone
  - USB-C or Bluetooth headsets supported
- I/O
  - USB-C for charging and USB 2.0 data transfer
  - USB-PD 2.0 supports charger inputs up to 9 V/3 A
- WWAN
  - Worldwide LTE 4G in regions where it is available, and compatible with 3G networks.
  - AT&T and Verizon certified. MicroSIM card.
- Wi-Fi
  - 2.4 GHz 802.11 b/g/n/ac & 5.0 GHz 802.11 a/n/ac
- Bluetooth®
  - Bluetooth 5 classic & BLE 5, Class 1
- Camera
  - Rear camera: 13 MP auto-focus with LED flash
- GNSS
  - IntegratedSierraWirelessEM7565; L1C/A,GPS/ GLONASS/ BeiDou/Galileo/QZSS
- Sensors
  - Ambient light sensor, e-Compass, accelerometer, gyro sensor

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