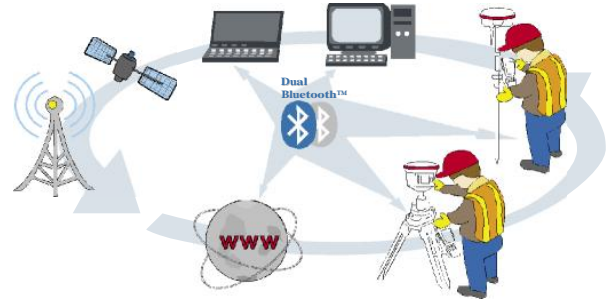


THE KRONOS 200 GPS SYSTEM

THE SUPERIOR GPS SYSTEM



KRONOS 200



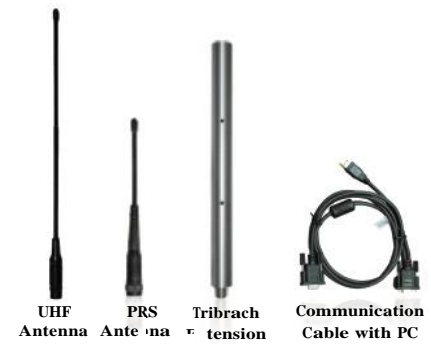
KRONOS 200 THE HORIZON KRONOS 200 GNSS SYSTEM

With the core board based on proven technology, the KRONOS 200 is able to excel in terms of accuracy, precision, and consistency during operation. Its channel capacity caters for multi-constellational GNSS integration, with alignments to the GPS, GLONASS GALILEO, COMPASS networks and other future satellite networks.

The KRONOS 200 product features:

1. Built using Trimble Maxwell 6 technology
2. Dual Bluetooth™ technology
3. RTK capability
4. High speed and stable GPRS connection to CORS network
5. Future expansion to include GSM connection
6. UHF data link technology
7. Low-elevation tracking technology
8. On-board multipath mitigation
9. Post-processing software to allow for application customization

Standard Accessories for KRONOS 200



UHF Antenna PRS Antenna Tribach Extension Communication Cable with PC

Standard Accessories for KRONOS 200 ROVER



2 x Batteries, Charger & Adaptor

Controller Communication Cable Controller & Receiver Communication Cable Communication Cable with PC



KRONOS Software



2 x Batteries, Charger & Adaptor Measuring Tape



Tribach & Tribach Adaptor KRONOS Software

Optional Accessories for KRONOS 200



PDL Radio

Multi-Function Communication Cable

Write Frequency Cable



GPS Carbon Fiber Pole UHF Antenna PRS Antenna

KRONOS 200 Carrying Case



Measuring Tape

KRONOS 200M TECHNICAL SPECIFICATIONS GNSS MODULE SPECIFICATIONS:

| | | |
|---|--|--|
| Internal Memory | 4G (15 static days with frequency of 1 Hz) | |
| Number of Channels | 220 | |
| Satellite signals tracked | GPS: | Simultaneous L1 C/A, L2E, L2C, L5 |
| | GLONASS: | Simultaneous L1 C/A, L1 P, L2 C/A (GLONASS M Only), L2 P |
| | SBAS: | Simultaneous L1 C/A, L5 |
| | GALILEO | Simultaneous L1 BOC, E5A, E5B, E5AltBOC1 |
| | COMPASS | B1,B22-QZSS:L1 C/A, L1 SAIF,L2C, L5 |
| PERFORMANCE SPECIFICATION | | |
| Initialization time: | 45 sec | |
| Signal recapture: | 1 sec | |
| RTK signal initialization | 20 sec | |
| Velocity Accuracy | Horizontal-0.007 m/s Vertical 0.020m/s | |
| Acceleration | 11 g | |
| Maximum Operating Limits | | |
| Velocity | 515m/s | |
| Altitude | 18,000 m | |
| Up to 50 Hz raw measurement & position outputs. | | |
| Very low noise GNSS carrier phase measurements with <1 mm precision in a 1 Hz bandwidth | | |
| Proven low elevation tracking technology. | | |
| Mother board | | |
| GSM module The GSM board mount a SIMENS MC75i unit for GSM/GPRS communication. | | |
| This module supports | Single band operation at 800 MHz, Dual band operation at 900 MHz and 1800 MHz, Tri-band operation at 800 MHz, 900 MHz, 1800 MHz. | |
| Packet data service of GPRS | CLASS 10 | |
| Maximum rate of transmission 85.6 kbit/s. | | |
| Embedded TCP/IP protocol suite that supports multiple links and provides ACK answer and large-capacity cache. | | |
| Connection devices | | |
| Connectors I/O: 9-pins serial port (baud rate up to 115.200kbps) and 5-pins LEMO interfaces. | | |
| Multicable with USB interface for connecting with PC. | | |
| 2.4GHz Bluetooth device class II | Maximum range is 50m. | |
| Internal Radio: | | |
| 3 frequency range option (Emit or Receive) | 410-430MHZ, 430-450MHZ, 450-470MHZ | |
| GSM/GPRS Modem | | |
| GSM/GPRS data modem maximum range | 70km. | |
| External radio: | | |
| PDL radio, emitting power and maximum range depending on model | Maximum range 22km. | |
| Serial protocols | | |
| Reference outputs | CMR+, CMRx, RTCM 2.1, RTCM 2.3, RTCM 3.0, RTCM 3.1. | |
| Navigation outputs: | ASCII (NMEA-0183 GSV), AVR, RMC, HDT, VGK, VHD, ROT, GGK, GSA, ZDA, VTG, GST, PJT, PJK, BPQ, GLL, GRS, GBS, GSOF. | |
| External cell phone support | RTK and VRS operation (optional). | |
| Receiver accuracy | | |
| Static horizontal accuracy | 3mm ± 1ppm (RMS). | |
| Static vertical accuracy | 5mm ± 1ppm (RMS). | |
| Fixed RTK horizontal accuracy | 8mm ± 1ppm (RMS). | |
| Fixed RTK vertical accuracy | 15mm ± 1ppm (RMS). | |
| DGPS horizontal accuracy | 0.25m ± 1ppm (RMS). | |
| DGPS vertical accuracy | 0.50m ± 1ppm (RMS). | |
| Stand Alone RTK positioning accuracy | 1.5m (CEP). | |
| SBAS horizontal accuracy | 0.50m | |
| SBAS vertical accuracy | 0.85m | |
| Power Supply (9 to a 15V DC external power input with over-voltage) | | |
| Voltage: | 7.2 V. | |
| Working time in static mode: | Typically 6 hours. | |
| Working time in RTK rover mode: | Typically 4 hours. | |
| Charge Time | Typically 7 hours. | |
| Power consumption | < 3.8 W. | |
| Remaining time with battery light blinking: | 1 hour. | |
| Physical specification: | | |
| Size | Height 96mm x Diameter 186mm. 59mm from the center of the rubber loop to the bottom. | |
| Weight | 1.2 Kg with internal battery, radio standard UHF antenna. | |
| Operational temperature | -25°C to 60°C (-13°F to 140°F) | |
| Storage temperature | -55°C to 85°C (-67°F to 185°F) | |
| Waterproofing | Protected from temporary immersion to depth of 1 meter and from 100% humidity and dustproof. | |
| Shock resistance | Designed to survive a 2m pole drop on the concrete and has vibration resistance. | |