GEO-KOMBI

One recipient for
everyone Applications

Supports every
common satellite signals
such as GPS, GLONASS, SBAS

Highly precise direction
determination

configuration
over network

Versatile
use

Expandable by
different modules

robust

geo-konzept
inventarisieren. kartieren. optimieren.

TECHNICAL SPECIFICATIONS[1]

- Trimble Maxwell 7 Technology
- On-board Advanced MEMS inertial sensors
- Position Antenna based on 336 Channel Maxwell 7 chip:
  - » GPS: L1 C/A, L2E, L2C, L5
  - » BeiDou B1, B2, B313
  - » GLONASS: L1 C/A, L2 C/A, L3 CDMA14
  - » Galileo2: E1, E5A, E5B, E5AltBOC, E614
  - » IRNSS L5
  - » QZSS: L1 C/A, L1 SAIF,L1C, L2C, L5, LEX
  - » SBAS: L1 C/A, L5
  - » MSS L-Band: OmniSTAR, Trimble RTX
- Vector Antenna based on second 336 Channel Maxwell 7 chip:
  - » GPS: L1 C/A, L2E, L2C, L5
  - » BeiDou B1, B2, B3
  - » GLONASS: L1 C/A, L2 C/A, L3 CDMA14
  - » Galileo2: E1, E5A, E5B, E5AltBOC, E614
  - » IRNSS L5
  - » QZSS: L1 C/A, L1 SAIF, L1C, L2C, L5, LEX
- High precision multiple correlator for GNSS pseudorange measurements
- Trimble Everest Plus multipath mitigation
- Advanced RF Spectrum Monitoring and Analysis
- Unfiltered, unsmoothed pseudorange measurements data for low noise, low multipath error, low time domain correlation and high dynamic response
- Very low noise GNSS carrier phase measurements with <1 mm precision in a 1 H bandwidth
- Proven Trimble low elevation tracking technology
- Reference outputs/inputs
  - » CMR, CMR+, sCMRx, RTCM 2.1, 2.2, 2.3, 3.0, 3.112, 3.2
- Navigation outputs
  - » ASCII: NMEA-0183 GSV, AVR, RMC, HDT, VGK, VHD, ROT, GGK, GGA, GSA, ZDA, VTG, GST, PJT,PJK, BPQ, GLL, GRS, GBS and Binary: Trimble GSOF, NMEA2000
- 1 Pulse Per Second Output
- Event Marker Input Support
- Supports Fault Detection & Exclusion (FDE), Receiver Autonomous Integrity Monitoring (RAIM)

COMMUNICATION

- 1 USB 2.0 Device port
- 1 LAN Ethernet port:
  - » Supports links to 10BaseT/100BaseT auto-negotiate networks
  - » All functions are performed through a single IP address simultaneously—including web GUI access and raw data streaming
  - » Network Protocols supported
    - * HTTP (web GUI)
    - * NMEA, GSOF, CMR over TCP/IP or UDP
    - * NTP Server
    - * NTripCaster, NTripServer, NTripClient
    - * Dynamic DNS
    - * mDNS/uPnP Service discovery
    - * eMail alerts
    - * Network link to Google Earth
    - * RDNIS Support
    - * Support for external modems via PPP
- 2 x RS232 ports
  - » Baud rates up to 460,800
- 1 CAN Port
- Control Software: HTML web browser, Internet Explorer, Firefox, Safari, Opera, Google Chrome

PERFORMANCE SPECIFICATIONS

Time to First Fix (TTFF)[7]	
Cold Start[8]	<45 seconds
Warm Start[9]	<30 seconds
Signal Re-acquisition	<2 seconds
Velocity Accuracy[3,4]	
Horizontal	0.007 m/sec
Vertical	0.020 m/sec
Inertial Sensors	
Maximum acceleration	±6 g
Maximum angular rate	±350 deg/sec
Maximum Operating Limits[10]	
Velocity	515 m/sec
Altitude	18,000 m
RTK initialization time[3]	typically <1 minute
RTK initialization reliability[3]	>99.9%
Position latency[5]	<20ms
Maximum Position/Atitude Update Rate	50 Hz

PHYSICAL AND ELECTRICAL CHARACTERISTICS

Size	149 mm x 93 mm x 43 mm
Power	9V DC to 30V DC Typical 1.5 W (L1/L2 GPS + L1/L2 GLONASS)
Weight	0.75 kg
Connectors	
I/O	D-sub DE9 and DA26
GNSS Antenna	2 x TNC (Female)
Antenna LNA Power Input	
Input voltage	3.3V DC to 5V DC
Maximum current	400 mA
Minimum required LNA Gain	31.0 dB (> 35 dB Recommended)

ENVIRONMENTAL CHARACTERISTICS[11]

Temperature	
Operating	–40 °C to +75 °C
Storage	–55 °C to +85 °C
Vibration	MIL810F, tailored Random 6.2 gRMS operating Random 8 gRMS survival
Mechanical shock	MIL810D±40 g operating ±75 g survival
Operating Humidity	5% to 95% R.H. non-condensing, at +60 °C
IP Rating	IP67

ORDERING INFORMATION

Module Part Number	100992-XX
Module	Trimble BX992 GNSS available in a variety of configurations from L1 SBAS upwards
Evaluation Kit	Includes interface board, power supply

1 Trimble BX992 is available in a variety of software configurations. Specifications shown reflect full capibility.
2 Developed under a License of the European Union and the European Space Agency.
3 May be affected by atmospheric conditions, signal multipath, and satellite geometry. Initialization reliability is continuously monitored to ensure highest quality.
4 1 sigma level, when using Trimble Zephyr 2/3 antennas, Add 1 ppm for RTK position accuracies.
5 At maximum output rate.
6 GPS only and depends on SBAS System performance. FAA WAAS accuracy specifications are <5 m 3DRMS.
7 Typical observed values.
8 No previous satellite (ephemerides / almanac) or position (approximate position or time) information.
9 Ephemerides and last used position known
10 As required by the U.S. Department of Commerce to comply with export licensing restrictions.
11 Dependent on appropriate mounting/enclosure design.
12 Input only network correction
13 The hardware of this product is designed for Beidou B3 compatibility (trial version) and its firmware will be enhanced to fully support such new signals as soon as the officially published signal interface control documentation (ICD) becomes available.
14 There is no public GLONASS L3 CDMA or Galileo E6 ICD. The current capability in the receivers is based on publicly available information. As such, Trimble cannot guarantee that these receivers will be fully compatible.
15 15 RTX and OmniSTAR accuracies depend on correction service chosen. Trimble CenterPoint RTX provides <4cm horizontal accuracy 95% of the time with initializations of less than 30 minutes.