



A90 Intelligent GNSS Receiver



- Compact design, more productive
- Professional GNSS satellites tracked simultaneously(GPS,Glonass,Galileo,Beidou)
- Automatic data collection during centering
- It has IMU function. When the pole is tilted in 60 degrees, it still could get the right point data by automatic correct system
- Applies WIFI connection to realize WebUI control designed to modify settings and monitor the receiver status
- Bundled Android field software brings a big change in user experience and accessibility

A90 GNSS Receiver Specifications

GNSS Engine

Channel: 800
GPS: L1C/A, L2E, L2C, L5
GLONASS: L1C/A, L2C/A, L3, CDMA BeiDou:
B1I, B2I, B3I, B1C, B2a, B2b, ACEBOC GALILEO:
E1, E5A, E5B, E5AltBOC, E6 IRNSS: L5 SBAS:
L1C/A, L5
QZSS: L1C/A, L1 SAIF, L1C, L2C, L5, LEX
IMU function
Tilt survey 60 degree

Performance Specifications

- Time to First Fix(TTFF):
Cold Start: <45 seconds
Warm Start: <30 seconds
Signal Re-acquisition: <2 seconds
- RTK Initialization time:
typically <8 seconds
RTK initialization reliability >99.9%
Position latency: <20 ms

Real-Time Accuracy (rms)*1

- Autonomous
Horizontal: 100cm (3.28ft), Vertical: 150cm (4.92ft)
- SBAS
Horizontal: 50cm (1.64ft), Vertical: 85cm (2.79ft)
- DGNSS
Horizontal: 25cm (0.82ft), Vertical: 50cm (1.64ft)
- Real-Time Kinematic (fine mode)
Horizontal: 8mm (0.03ft) + 0.5ppm
Vertical: 15mm (0.05ft) + 0.5ppm

Post Processing Accuracy (rms)*2

- Static, Rapid Static
Horizontal: 2.5mm (0.008 ft) + 0.5ppm
Vertical: 5mm (0.016 ft) + 0.5ppm
- High-precision Static for long time
Horizontal: 3mm (0.010 ft) + 0.1ppm
Vertical: 3.5mm (0.011 ft) + 0.4ppm

Solutions

Field Software Suite

FOIFPad(WM/Android) ,FOIF FieldGenius
or Carlson SurvCE

- Main functions include:
A90 GNSS Support: configuration,
monitoring and control
- Volume computation
- Background raster image
- Network connectivity
Coordinate System Support: predefined
grid systems, predefined datums,
projections, Geoids, local grid
- Map view with colored lines
Geodetic Geometry: intersection,
azimuth/distance, offsetting, poly-line,
curve, area
- Road Construction(3D)
Survey Utilities: calculator, RW5 file
- viewing
Data import/Export: DXF, SHP, RW5

Data logging

- Recording Interval
0.1- 999 seconds

Physical

- Flat design
- Size: 156mm*76mm(Φ x H)
- Bottom cover: Aluminium magnesium alloy
- Memory
Internal memory: 8GB standard; Supports
extending to 32GB

I/O Interface

- TNC port: connecting built-in radio antenna
- 5-pin lemo port: connecting external power
supply and external radio
- 7-pin lemo port(USB+serial port): connecting
PC and handheld

Operating system

- Based on Linux; Supports Web UI
- Voice

- Multi-language supported

Tilt survey sensor

- Automatic correct system by 30degree
- Data Format

- RTCM2.1, 2.2, 2.3, 3.0, 3.1, 3.2
- CMR, CMR+, sCMRx

Operation

- RTK rover/base, post-processing
- RTK Network rover: VRS, FKP, MAC
- Point-to-Point GPRS through Real-time Data
- Server Software (internal GPRS or external
cell phone)

- LandXML(FOIF FieldGenius support)
Total Station support (FOIF FieldGenius)
- Import and stake directly from a DXF File
(FOIF FieldGenius)

Office Software Suite:

FOIF Geomatics office

Main functions include:

- Network post-processing
- Integrated transformation and grid
system computations
- Pre-defined datums along with use
-defined capabilities
- Survey mission planning
- Automatic vector processing
- Least-squares network adjustment
- Data analysis and quality control tools
- Coordinate transformations
- Reporting
- Exporting
- Geoid

Environmental

- Operating temperature:
-30°C to +65°C (-22°F to +149°F)
- Storage temperature:
-40°C to +80°C (-40°F to +176°F)

- Humidity: 100% condensing
- Waterproof: IP68
- Shock: 2 m (6.56 ft) pole drop
1.2m(3.94ft) free drop

Power

- 7.2V, 6800mAh, removable battery
- Over 13 hours when simultaneous
use of 2 batteries

Optional System Components

Communication Module

- Internal radio
-UHF-Link(410-470MHz) Rx&Tx both
-0.5/2W
- External radio
-FOIF external radio Rx & Tx(FDL-5,
5/35W selectable)
- 4G LTE module:
Fits various networks
- BlueTooth
2.1+EDR Class 2
- WiFi
IEEE 802.11 b/g/n

- Antenna
Built-in antenna, integrating GNSS,
BT/WLAN and network antenna

- Controller
- F58

*1 Performance values assume minimum of five
satellites, following the procedures recommended
in the product manual. High-multipath areas, high
PDOP values and periods of severe atmospheric
conditions may degrade performance.

*2 Long baselines, long occupations, precise
ephemeris used.

FOIF Geomatics CAD

Main functions include:

- DWG file format, compatible with AutoCAD
Integrated transformation and grid
system computations
- Full 3D least squares adjustment, blunder
detection, graphical ellipse display
- DTM contouring/Modeling volumes/3D rendering
- Site Design: Ponds, ditches, stockpiles and slopes
- Road Design: horizontal and vertical alignments,
cross sectional templates
- Completely customizable user interface
-Toolbars - can be arranged with "drag and drop"
functionality
-Menus - can be re-organized with our graphical
menu editor
-Screen - items can be turned off for more
graphics area
-Layout - of command window - top or bottom
- Reporting, exporting and printing

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