



## A90 Intelligent GNSS Receiver



- Compact design, more productive
- Professional GNSS satellites tracked simultaneously(GPS, Glonass, Galileo, Beidou)
- Automatic data collection during centering
- When the pole is tilted in 30 degrees, A90 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

- 555 channels
- Advanced interface detection and mitigation
- Maximum data rate: 100Hz
- GPS: L1 C/A, L1C, L2C, L2P, L5
- GLONASS: L1 C/A, L2 C/A, L2P, L3, L5
- BeiDou: B1, B2, B3
- Galileo: E1, E5 AltBOC, E5a, E5b, E6
- NavIC (IRNSS) : L5
- SBAS : L1, L5
- QZSS : L1 C/A, L1C, L2C, L5, L6
- L-Band: Up to 5 channels
- 336 channels optional

## Performance Specifications

- Time to First Fix(TTFF):  
Cold start:<40s(typical)  
Hot start:<19s(typical)  
Signal reacquisition:  
L1<0.5s(typical)  
L2<1.0s(typical)
- RTK Initialization time:  
<10 s
- RTK Initialization reliability:  
>99.9%

## Real-Time Accuracy (rms)<sup>\*1</sup>

- SBAS  
Horizontal: 60cm(1.97ft), Vertical:120cm(3.94ft)
- Real-Time DGPS position  
Horizontal: 40cm (1.31ft), Vertical:80cm(2.62ft)
- Real-Time Kinematic Position (fine mode)  
Horizontal: 1cm(0.03ft) + 1.0 ppm  
Vertical: 2.5cm(0.08ft) + 1.0 ppm

## Post Processing Accuracy (rms)<sup>\*2</sup>

- Static, Rapid Static  
Horizontal 2.5 mm (0.008 ft) + 1.0 ppm  
Vertical 5 mm (0.016 ft) + 1.0 ppm

## 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

- RTCM 2.3,RTCM 3.0,RTCM3.X,CMR,CMR+,NovAtelX/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: IP67(IEC60529)
- Shock: 2 m (6.56 ft) pole drop,  
1.2m(3.94ft) free drop

## Power

- 7.2V, 6800mAh,removable battery
- Optional System Components**
- Internal radio(1W)
  - UHF-Link(410-470MHz) Rx&Tx both
  - GMSK modulation
  - Maximum output power for UHF (UHF 440.000MHz:30.6dBm)
  - External antenna, maximum gain is 4dBi for UHF
- External radio
  - FOIF external radio Rx & Tx(FDL-5, 5/35W)
- 4G LTE module:
  - FDD LTE Band 1/3/7/8/20, TDD LTE Band 38/40
  - 16-QAM,QPSK modulation
  - Maximum output power(B1:29.35dBm, B3:27.02dBm,B7:28.20dBm,B8:28.43dBm, B20:27.81dBm,B38:27.34dBm,B40:27.34dBm)
  - Internal antenna, maximum gain is 0.5dBi for LTE
- BlueTooth
  - 2402-2480MHz for BT 4.1 BLE+EDR
  - GFSK, π/4 DQPSK, 8-DPSK modulation
  - Maximum output power(BT EDR 2402MHz: 0.50dBm, BT BLE 2402MHz:-7.2dBm)
  - Internal antenna, maximum gain is 1dBi for BT
- WiFi
  - 2412-2472MHz
  - 802.11b: DSSS(CCK,DQPSK,DBPSK)
  - 802.11g: OFDM(64QAM,16QAM,QPSK,BPSK)
  - 802.11n HT20: OFDM(64QAM,16QAM,QPSK,BPSK)
  - Maximum output power(802.11b 2412MHz: 13.5dBm,802.11g 2412MHz:11.32dBm, 802.11n/HT20 2412MHz:10.89dBm)
  - Internal antenna, maximum gain is 1dBi for WLAN
- Controller
  - F58/F59

\*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

## 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

## Related Products



A30 Receiver



A60 Receiver



A3 Static Receiver



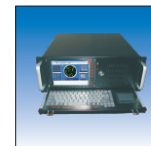
A50 Receiver



F58 GNSS Handhelder



A100 Reference Receiver



A200 CORS Receiver

Illustrations, descriptions and technical specifications are not binding and may change



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