

A20 GNSS Receiver Specifications



A20(E) 2010.12

GNSS Engine

- Fully independent code and phase measurements
- Advanced multipath mitigation
- Update rate: 1, 2, 5, 10, 20 Hz Selectable
- 120 channels (Default):
 - GPS: L1, L2, L2C
 - GLONASS: L1, L2
 - Galileo: E1 (Reserved)
 - Compass
 - GLOVE-A/GLOVE-B (Test)
 - SBAS
- 220 channels(Optional):
 - GPS: L1 C/A, L2E, L2C, L5
 - GLONASS: GLOVL1 C/A, L1PL2 C/A, L2P
 - SBAS: L1 C/A, L5
 - GIOVE-A: L1 BOC, E5A, E5B, E5AItBOC
 - GIOVE-B: L1 CBOC, E5A, E5B, E5AItBOC
 - GALILEO: L1 CBOC, E5A, E5B, E5AItBOC
- Supporting other options
- Real-Time Accuracy (rms)^{*2}**
 - SBAS (WAAS/EGNOS/MSAS)
 - Horizontal: <3 m (10 ft)
 - Real-Time DGPS position
 - 25 cm (0.82 ft) + 1ppm (rms) in typical condition
 - Real-Time Kinematic Position (fine mode)
 - Horizontal 10 mm (0.033 ft) + 1.0 ppm
 - Vertical 20 mm (0.065 ft) + 1.0 ppm
- Real-Time Performance**
 - Instant-RTK Initialization
 - Typically 2-second initialization for baselines < 20 km
 - 99.9% reliability
 - RTK Initialization range >40 km

Post Processing Accuracy (rms)^{*3}

- Static, Rapid Static
- Horizontal 5 mm (0.016 ft) + 0.5 ppm
- Vertical 10 mm (0.033 ft) + 0.5 ppm
- Long Static
- Horizontal 3 mm (0.009 ft) + 0.5 ppm
- Vertical 6 mm (0.019 ft) + 0.5 ppm

Field Software Suite

FOIF Survey or FOIF FieldGenius

- Main functions include:
- A20 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, LandXML(FOIF FieldGenius support)
 - Total Station support (FOIF FieldGenius)
 - Import and stake directly from a DXF File (FOIF FieldGenius)

Post-Processed Kinematic

- Horizontal 10 mm (0.033 ft) + 1.0 ppm
- Vertical 20 mm (0.065 ft) + 1.0 ppm

Data logging

- Recording Interval: 0.1- 999 seconds

Physical

- Size: Unit: 22.8x20.4x9.5 cm
- Weight: Rover: 1.5kg (W/O battery) 1.7kg (With battery)

Monitoring Screen

- Graphical OLED display: 4 lines X 16 characters

Memory

- 128 MB internal memory (4GB internal memory optional)
- Up to 400 hours of 15 sec. raw GNSS data from 18 satellites

I/O Interface

- RS232X2, Bluetooth,
- USB & Ethernet(Factory optional)
- PPS, Ext Event(Optional)

Data Format

- RTCM 2.x
- RTCM 3.x
- CMR, CMR+
- NMEA 0183
- NTRIP protocol
- PPS out

Operation

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

Environmental

- Operating temperature: -30°C to +65°C (-22F to 149F)
- Storage temperature: -40°C to +75°C (-40F to +167F)
- Humidity: 100% condensing
- Waterproof: IP67(IEC60529)
- Shock: 2 m (6.56 ft) pole drop
- Power**
 - Battery: Li-Ion & life time: 4.4Ah(>10hrs), 5.8Ah(>13hrs optional) (UHF rover at 20°C)
 - External power supply 6-18 VDC input
 - Battery Charger kit FOIF FDQ7
- Optional System Components**
 - Communication Module
 - Internal radio
 - Satel UHF-Link(403-473MHz) Rx&Tx both
 - Pacific Crest UHF-Link(390-430MHz/430-470MHz) Rx & Tx both (optional)
 - UHF-Link(390-430MHz/430-450MHz/450-470MHz) Rx only
 - External radio/Power Amplifier
 - FOIF external radio Rx & Tx(FDL-1, 2/35W selectable)
 - Pacific Crest radio(390-430MHz/430-470MHz)Optional
 - FOIF Power Amplifier (FDL-3 25W)
 - GSM/GPRS/EDGE (class 10)
 - Dual-band
 - GSM/GPRS: 900/1800MHz band
 - Quad-band(optional)
 - GSM/GPRS: 850/900/1800/1900MHz band
 - CDMA(Optional)
 - Controller
 - PS236, PS236 with 3G function (optional)
 - PS535F (Optional)

*1 Other field software & controllers are also compatible with A20, such as SurvCE, FeildGenius and SurveyPro.

*2 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.

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

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

Office Software Suite:

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
- 12 hours of built-in training movies
- 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

Related Products



A10 Static Receiver



FOIF Smart Station

A20 GNSS Receiver



- Professional GNSS Satellite tracking(GPS, Glonass, Galileo, Compass...)
- Equipped with industry standard GNSS engine (Trimble, Novatel, Javad...), and proven Trimble PCC or Satel radios
- Advanced rugged and modular design
- Base and rover communication options to suit any application
- All-in-one Flexibility
- Voice messages
- OLED display with superior brightness & temperature range
- Up to 220 universal tracking channels option

Local Dealer:

FOIF Since 1958
It's professional

Suzhou FOIF Co.,Ltd.

TEL:+86 512 65224904

FAX:+86 512 65230619

Http://www.foif.com

E-mail:internationalsales@foif.com.cn

ADD: 18 Tong Yuan Road, Suzhou 215006, P.R. China

Headquarters: Lat N31° 15' 48.6", Long E 120° 40' 2.1"



A20 GNSS Receiver

Fully Integrated High-Performance GNSS System

The FOIF GNSS Receiver sets the new standard for full-featured GNSS(Global Navigation Satellite System)receiver technology. This integrated system delivers unmatched power, accuracy and performance in a rugged, compact unit. A20 also features numerous additional enhancements, including improved RTK performance, seamless Virtual Reference Station support, Bluetooth connections for cable-free surveying convenience, and it offers voice messages for audible status notifications in the field. The Graphical OLED display has superior brightness & weather protection. Equipped with industry standard GNSS engine (Trimble, Novatel, Javad...), and proven Satel or PCC radios support improved performance on the high precision position jobs and related infrastructure constructions.



A20 Features



Fully integrated, rugged design

- High-performance, multi-frequency GNSS receiver and antenna, Bluetooth wireless, GPRS/CDMA technology, memory, SD card, batteries and internal data link in one compact unit.
- Base and rover communication options to suit any application.



OLED display panel

GPS + GLONASS satellite tracking capability

- Up to 220 (Factory optional) universal GNSS channels support all GPS and GLONASS signals & SBAS tracking or OmniSTAR XP/HP support
- Improved positioning in urban areas and in areas with dense tree coverage. RTK solution maintained if data link is dropped



Multi interface

Ready for Galileo (Factory optional)

- A20 also support Galileo and Compass satellites. When Galileo and Compass are ready, FOIF will be too.

Voice messages

- A20 receiver provides audible status notifications in the field.

Super bright OLED display & LED

- OLED has many superior performance advantages over LCD: Super-bright, wide viewing angle, quick response time, energy efficient, operational under -40°C to 80°C and rugged environment. Provides status indicators for satellite tracking, battery life, remaining memory, occupation time and communications.



External Radio
Output power: 2W/35W selectable

Ergonomics

- A20 has a comprehensive built-in interface for receiver monitoring. This interface is based on a OLED graphical display and functional keys that enable the user to interact directly with the GNSS receiver. You can set or check GNSS receiver status easily, such as language, volume, GPRS, radio, or elevation mask, etc.



Power Amplify
Output power: 25W

- External radio is applied to enlarge the range of surveying area. (no internal transmitting radio)

- Power Amplifier can enlarge transferring distance which is the same function as external radio, but should work together with A20 which has internal transmitting radio.

Convenient rover setup

- Quick and easy setup requires only a pole, data collector with bracket and the A20 receiver - no cables necessary, easy-to-use.

- Interoperability with main vendor's reference station using UHF.

Easy "one Button" base setup

- Press the power button, and begin transmitting RTK base corrections and collecting raw data in seconds.

- No cables, external data link or data collector required.(internal transmitting radio mode)

Seamless Virtual Reference Station support

- Compatible with Virtual Reference Station, FKP and Master Auxiliary reference networks. Supports GSM dial-up connections and NTRIP GPRS connections, also support CDMA.(optional)

- Allows stand-alone RTK rover positioning - no base required.

All-in-one Flexibility

- A20 series offers all-in-one communication capabilities. It is the most flexible GNSS surveying system available, offering multiple operating modes, configurations and communication modules(internal& external UHF,GSM/GPRS/EDGE/CDMA) and protocols.

- Features such as OLED display with superior bright LED lights, SD-card, high capacity Li-ION battery and bluetooth wireless technology. USB and Ethernet also could be supported (Factory optional).

- Regarding internal transmitting radio (1W). PCC and Satel are selectable.

- External power supply 6-18V DC are available. Battery can be charged onboard.

Ultra Rugged construction

- Durable housing, ultra rugged, weatherproof design, protected from temporary immersion to depth of 1 m, with standards 2m pole drop onto concrete.

Feature-rich Surveying Solution

The A20 is available with either Windows Mobile in the PS236 or PS535F series fully rugged controller



PS236 is the first fully rugged handheld built to meet with high-speed HSDPA wireless networking.

- Microsoft Windows Mobile 6.1 OS
- MIL-STD-810G and IP67 compliance
- 3.5inch transfective sunlight readable LCD
- Embedded high sensitivity GPS receiver
- 3 Megapixel Pixels Auto-focus camera
- E-compass ensuring perfect GPS applications
- Long battery life provides all-day power
- 3G function is supported

PS535F series includes the PS535F and PS535FL. The PS535F is a handheld GPS receiver which can be used for additional work such as pre-survey and GIS data collection. It has the following advanced features:

- Microsoft Windows Mobile 5.0/6.1 OS
- MIL-STD-810F and IP65 compliance
- 3.5inch transfective sunlight readable LCD
- Embedded high sensitivity GPS receiver
- 3 Megapixel Pixels Auto-focus camera
- E-compass and Altimeter
- Long battery life provides all-day power



(Optional)

In addition, the controllers with FOIF Survey for GPS or FOIF FieldGenius field software provide a rich feature set for high-end field operation. FOIF FieldGenius also supports the FOIF TS810 Windows CE Total Station and other TS&GNSS receivers, allowing you to use one controller for both types of instrument.

FOIF Survey or FOIF FieldGenius are graphical field software programs for topography and construction, fully re-designed to optimize the functionality and performance of the GNSS system. The ability to collect single coordinate shots, full RTK vectors, raw GNSS data and all data types concurrently, provides a flexible solution for your changing needs. FOIF Survey or FOIF FieldGenius are both powerful and easy to use. The scalable map-view screen displays points and lines as they are surveyed, offering large-print controls for rapid, reliable data collection. Rich attributing, full editing in the field and saves both time and effort.

Field Software features¹

- Standard Windows pull down menus for ease of use with minimal training required
- Fully live editable database
- Swap between coordinate systems with the push of a button
- Perform surveys in one coordinate system and download in any other system as required, including local systems
- Edit errors in the field, such as Target or Antenna height errors, "on the go" and get immediate recalculation of coordinates - no need to edit after the survey
- Use control points from any coordinate system - transformation into your current coordinate system is instantaneous
- When working on the edge of a zone, download data in both zones as required
- Perform TS surveys and assign/change backsights at your convenience/ Import and stake directly from a DXF File/ Following data format are support: DXF, SHP, RW5, LandXML(FOIF FieldGenius support).



FOIF FieldGenius

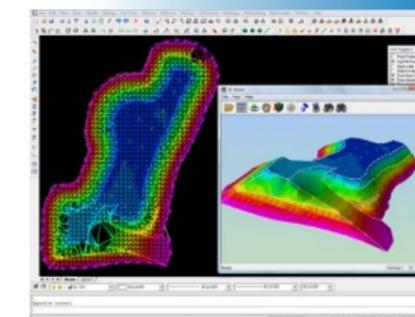
FOIF Survey for GPS

Office Software

FOIF Geomatics Office(FGO) is a comprehensive software package with all of the tools required to successfully process GPS survey data. Focusing on simplicity, the software guides you through mission preparation planning, processing, quality control, reporting and data exporting.

FOIF Geomatics Office can handle post-processing data. The software includes advanced blunder detection and quality analysis tools to ensure extremely accurate and reliable results. New in FGO is the ability to download data from multiple reference stations to provide a post processed network solution for measurements quality control. The innovative approach to presenting survey data in graphical and tabular form makes post processing with FGO a simple and enjoyable experience.

FOIF Geomatics CAD is a complete Desktop Survey and Design program created for Surveyors, Contractors, and Engineers. No plug-ins or modules are necessary. Complete Survey Drafting, COGO, DTM, Traversing, Volumes, Contouring and Data Collection interfacing are included. With FOIF Geomatics CAD you get unbeatable functionality at a lower price.



FOIF Geomatics CAD