



Department of Public Works and Highways  
**BUREAU OF DESIGN**  
**SURVEYS AND INVESTIGATION DIVISION**  
**Standard Technical Specifications for**  
**ENGINEERING SURVEY EQUIPMENT**

Issue Date :	07 / 06 / 23
Doc. Code	DPWH-BOD-SID-QMSF-13.f
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**Name of Equipment: GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) EQUIPMENT**

**Description:**

Data receiver which converts signals from visible satellites then use this information to determine their position.

**Main Equipment Components**

**Specification**

**Receiver (Base/Rover)**

Multi-frequency (Capable of receiving multitude of signals from any GNSS system)  
Measurement Capability  
Integrated Transmit and Receive Data Link  
Base and Rover interchangeable (same brand and model)

Satellite Tracking  
No. of Channels  
High Accuracy Static (RMS)

Static and Fast Static (RMS)

Real Time Kinematic (RTK)

Equipment Time to Fix  
Battery life  
Dust/Water Protection  
Communication

Single Base RTK, Network RTK and PPK

GPS, GLONASS, BEIDOU, GALILEO, QZSS, SBAS  
440 channels (min.)

Horizontal: 3 mm  $\pm$  0.1 ppm

Vertical: 3.5 mm  $\pm$  0.4 ppm

Horizontal: 3 mm  $\pm$  0.5 ppm

Vertical: 5 mm  $\pm$  0.5 ppm

Horizontal: 8 mm  $\pm$  1.0 ppm

Vertical: 15 mm  $\pm$  1.0 ppm

15secs (max.)  
6 hours (min., single/multiple, hot-swappable)  
IP67 (min.)  
Bluetooth, Wi-Fi, USB, Cellular

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**Control**

Control Date: 7/6/23

Signature: [Signature]

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**Field Controller**

Same brand as the receiver or with certificate of compatibility from the manufacturer  
Operating System  
Screen size  
Internal Storage  
External Storage  
RAM  
Dust/Water Protection  
Camera  
Battery Life  
Applications Installed  
(License/Certification attached)

Windows/Android OS  
7" (min.) , colored  
32 GB (min.)  
32 GB (min.)  
4 GB (min.)  
IP67 (min.)  
8MP (min.)  
8hrs (min., single/multiple)  
Stake out, volume calculation, and road module applications

**External Radio**

Same brand as the receiver or with Certificate of compatibility from the manufacturer of main equipment

Output Power  
Frequency Range (UHF)  
With 1 set External Battery

35W  
300Mhz - 3Ghz

**Post Processing Software (License/Certification attached)**

**Data Processing Laptop**

Display: 15.6" (min.)  
OS: Windows 11 or latest edition  
Processor: 11th Gen. Intel Core i7 or AMD Ryzen equivalent  
GPU: RTX3060 or better  
RAM: 16GB  
Storage: 1TB SSD  
Warranty: 1 year

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**Accessories**

- 1 pc. Base Tripod (same brand as the receiver)
- 1 pc. Rover Bipod (same brand as the receiver)
- 1 pc. Rover Pole (same brand as the receiver)
- 2 pcs. Extra batteries (aside from the installed batteries, Manufacturer's battery)
- 1 pc. Extra battery (field controller, Manufacturer's battery)
- 1 pc. USB Flash Drive (32GB)
- 1 pc. External Hard Drive (1TB)
- 1 set Dual Head Battery Charger (Manufacturer's Charger)
- 1 set Equipment Manual

**Other Requirements:**

- Authorized/Exclusive Distributor's Certificate from the Manufacturer (Apostolate's Certificate attached)
- Certificate of Manufacturer's Service Support Center in the Philippines
- With one (1) year Warranty on Factory Defects
- With at least five (5) yrs. experience in supplying survey equipment
- With Local Service Center certified by the Manufacturer
- With five (5) days field and data post-processing training
- With Five (5) years' annual calibration from the Authorized Service Center accredited by the Bureau of Design
- Actual demo of equipment prior to award (Verification of equipment range = 5km)

**Additional Notes:**


**Notes:**

1. Specifications of main equipment must be indicated or reflected in the original brochure, manual or technical papers that can be downloaded or reflected in the website of the manufacturer.
2. Accessories shall be noted "complied" on the bidding documents and shall be checked for compliance upon delivery.
3. Other Requirements shall be supported by Certificate/s or Documents supporting its compliance.
4. All technical specifications issued prior to the date of this issuance are considered invalid/obsolete

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