



# SmartSolo IGU-BD3C-5

3-Component Broadband  
Smart Seismic Sensor

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## 3-Component Broadband Smart Seismic Sensor



### Features

- High quality, high sensitivity, high reliability
- Easy to deploy, high construction efficiency
- Wireless design, not limited by site
- Strong interference resistance, data remains undistorted
- Low cost, low power consumption, wide bandwidth
- Industry-leading, high cost-performance ratio

### Overview

IGU-BD3C-5 is a low-cost, wide-bandwidth, low-power three-component broadband intelligent seismic detector. Building upon the foundation of the high-sensitivity seismic detector DT-SOLO, produced by FaceOne Scientific Instruments, it combines electronic and software technologies from the mobile internet era with the currently popular and reliable electronic spreading technology. This allows its frequency band to reach a range of 0.2Hz to 150Hz.

### Applications

- Active and passive source seismic exploration
- Natural microtremor detection
- Transient surface wave exploration
- Karst area detection
- Underground spaces and void detection
- Engineering safety risk assessment
- Disaster early warning

### New generation 3-channel smart seismic sensor

Lower frequency limit down to 5s

Built-in battery supports continuous operation for up to 30 days

Supports external power supply and Bluetooth QC

### Reliable performance, high resolution

Built-in GPS and high-precision clock

32-bit  $\Sigma$ - $\Delta$  high-resolution ADC

Up to 0.25ms sampling rate

Dual-status indicator lights

Indicate Bluetooth, charging, and operational status

### Real-time data transmission

Real-time QC of seismic data and instrument status

Built-in 64GB storage

Compatible with controlled seismic sources and pulse seismic sources

### The peripheral equipment for IGU-16 HR3C AIO 5Hz

Specialized download and charging charger

16 Slots All-In-One

SoloLite software

SoloLite software

High-speed data download

USB 3.0 @ 20MB/s

Portable data download and charging all-in-one device

Flexible system configuration

Comprehensive software assistance



Specialized download and charging charger



16 Slots All-In-One

## General Specification

Seismic data channel(s)	3 (The ADC has 32bit resolution, the noise-free resolution is no more than 24bit)
ADC resolution	32 bits
Sample interval	0.25,0.5,1,2,4,8,10,20 ms
Instrument Noise Floor	Whole frequency band lower than the NHNM curve 5s~1Hz lower than the NLNM curve
Operating temperature	-40°C ~ +70°C
Waterproof	IP68
Physical Size	Φ158 x160mm (w/o spike)
Weight	2.8 kg (Including internal battery and spike)
Data Storage	64GB (can be expanded to 128GB)
Operating Life@25°C	30 days Continuous 60 days Segmented (12h ON/12h SLEEP)
External Power Supply	7V~ 15V (single supply)
Bluetooth QC	Available
Data Harvesting	USB 3.0
Charging Temperature Range	+3°C~ +45°C
Charging Time	<7.5H, Fully Charged (Standard battery)

## Acquisition Performance

(All parameters are specified at +22°C in the vertical position and horizontal position for horizontal geophone unless otherwise stated.)

Frequency Bandwidth	0.2Hz ~ 150Hz
Distortion	<0.1% @12HZ (0°~ 10°) tilt, (0°~3°) horizontal tilt
Sensitivity	200V/m/s (5.08 V/in/s)



## Channel Performance

(@ 2ms sample interval, 31.25 Hz, 25°C, unless otherwise indicated)

Maximum Input Signal	±2.5V <sub>peak</sub> @ Gain 0dB
Instantaneous Dynamic Range	120dB@ Gain 0dB
Common Mode Rejection	>100dB
Gain Accuracy	<1%
GPS Time Standard	1ppm
Timing Accuracy	+ 10μS, GPS Disciplined
Cross Feed	<-110dB
Inter-channel Phase Offset	<0.1ms
Transverse Vibration Rejection	Better than 0.1%
Inter-channel Amplitude Coherence	5%
System Dynamic Range	140 dB
Frequency Response	0~1652Hz

Specifications are subject to change without prior notice.



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