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IGU-BD3C-5



The IGU-BD3C-5 node instrument can conveniently and quickly form various networked seismic arrays, combined with active and passive source methods, to obtain extensive data for high density array spatiotemporal measurement (DAM). Suitable for scientific research and enterprise survey needs in different scale regions.

Applications:
- Nature seismological research
- Dense seismic array crust mantle structure detection
- Geological structure exploration
- Background noise imaging
- Volcanic structure research
- Imaging of lithospheric velocity structure
- Observation of aftershocks
- Microseimic monitoring
- Engineering structure survey
- Structure health monitoring
- Geological hazard monitoring



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IGU-BD3C-5
3-Component Broadband Smart Seismic Sensor



Features

.high fidelity、high sensitivity
.High quality、high consistency
.High reliability、high cost-effectiveness
.Reach 5s low frequency
.IP68 waterproof and dust-proof level
.High speed data download and charging
.Built-in GNSS,supports high-precision clock synchronization and positioning
.Built-in high-capacity local storage card, storing large amounts of data
.Ultra long battery life and ultra wide operating temperature range
.Flexible system configuration and comprehensive software assistance
.Supports external power supply and Bluetooth QC function
.Real time QC of seismic data and instrument status

Descriptions

The IGU-BD3C-5 is a low-cost, broadband, and low-power three component broadband node seismic instrument. On the basis of the highly sensitive seismic geophone DT-SOLO proudly produced by the panel scientific instrument, combined with the electronic and software technology in the mobile Internet era and the current internationally popular and reliable electronic spread spectrum technology, its frequency band range is up to 0.2 Hz -150 Hz.

Nodal Seismic Instruments

Integrated design
Built-in Battery supports continuous collection for 30 days
Supports external power supply and Bluetooth QC function
Dual status indicator lights, which can indicate Bluetooth, charging, and working status
Compatible with both controllable and pulse sources

Excellent performance

Built-in GPS receiver and high-precision disciplined clock
32-bit Σ-Δ, High Resolution ADC
Up to 0.25 ms Sample Intervals
Built-in 64 GB Data Storage, expandable to 128 GB

Peripheral Devices

Dedicated download charger (USB 3.0 @ 20 MB/s high-speed download)
16-port portable all-in-one device (data download, charging all-in-one device)
SoloLite software (simple and efficient)

Applications

.Geological structure research
.Research on surface waves and body waves
.Natural earthquake observation research
.Observation and research on volcanoes and tsunamis
.Infrasound research
.Observation and research on geological hazards
.Infrastructure geological assessment
.Active and passive source seismic exploration
.Natural micro motion detection
.Transient surface wave exploration
.Exploration of karst areas
.Underground space and goaf detection
.Engineering safety risk investigation
.Disaster warning

Real Time Data Transmission

Real time QC of seismic data and instrument status



Dedicated download charger



16-port all in one device

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Specification

General Specification

Seismic Data Channel	3
Physical Size	ϕ158 x160 mm (without spike)
Weight	2.8 kg(including battery and spike)
Waterproof	IP68
Operating Temperature Range	-40°C ~ + 70°C
Charging Temperature Range	+3°C ~ + 45°C
Charging Time	<7.5 hours
Battery Life @25°C	30 days @2 ms, 24 hrs/day operation 60 days @2 ms, 12 hrs/day operation
Data Storage	64 GB (expandable to 128 GB)
Bluetooth QC	Available
Data Harvesting	USB3.0
External Power	7 ~ 15 V DC
GNSS Model	Support GPS,BEIDOU,GLONASS,single or dual mode operation

Acquisition Channel Performance

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

ADC Resolution	32 bits(The ADC has 32-bit resolution, the noise-free resolution is no more than 24-bit)
Sample Intervals	0.25,0.5,1,2,4,8,10,20 ms
Self-noise Level	Whole frequency band lower than the NHNM curve,5s~1Hz lower than the NLNM curve
Maximum Input Signal	±2.5 V peak @Gain 0 dB
Instantaneous Dynamic Range	120 dB @2ms Gain 0 dB
Common Mode Rejection	>100 dB
Gain Accuracy	<1%
GNSS Time Standard	1 ppm
Timing Accuracy	±10 μs,GNSS Disciplined
Cross Feed	< -110 dB
Phase Difference Between Channels	< 0.1 ms
Transverse Vibration Suppression	Better than 0.1%
Consistency of Amplitude Between	5%
System Dynamic Range	140 dB
Frequency Response	0~1652 Hz @0.25 ms

Geophone Specification

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

requency Bandwidth	5 s~150 Hz
Distortion	< 0.1% @12 Hz , (0°~ 10°) vertical tilt, (0°~ 3°) horizontal tilt
Sensitivity	200 V/m/s (5.08 V/in/s)±12%

Note: Follow SEG polarity standard(When shocked by seismic motion, sensor upward motion as the channel record is Negative signal, sensor downward motion as the channel record is Positive signal).



SmartSolo Inc reserves the right to change specifications without notice while we improve the quality of our products.