SMARTSOLO®

World's First Smart Seismic Sensor

IMU-3C

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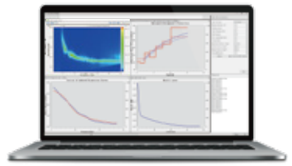
IMU-3C Features

IMU-3C is a three-components intelligent monitoring unit, which can carry out three-channel data acquisition. Based on the Mobile communication system, WIFI, Ethernet and other data transmission interfaces, IMU-3C is able to fulfil remote parameter configuration, real-time data transmission, real-time data monitoring and real-time data quality evaluation, etc.
Equipped with external sensor connector that compatible with multi-types of sensors.
Equipped with external power supply connector that customized for long term data acquisition. Integrate with GNSS module and internal antenna, external GNSS antenna is optional also. A surface wave processing software which developed by DTCC is now available for real-time dispersion, surface wave velocity analysis, inversion and imagining.



- New Generation 3 Components intelligent monitoring unit
- High resolution data with up to 0.25ms sampling and 24-bit delta-sigma ADC
- Built-in high precision DAC signal generator
- Externally connected with various sensors
- Built-in GNSS module, support internal and external GNSS antenna
- Support internal and external power supply
- Built-in 4G module (support SIM card replacement), achieve real-time data transmission, parameter configuring
- Built-in WiFi module, data download and parameter configuration at close range
- External 4G antenna, internal WiFi antenna
- Dual-LED indicator, indicates the acquisition and data transmission status of device

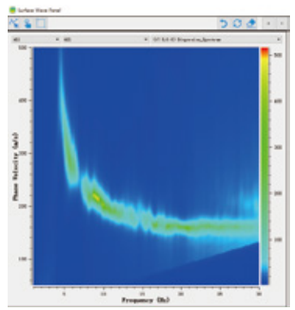
IMU-3C Peripherals

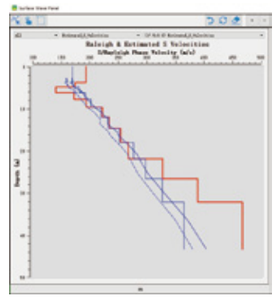
16 ports charging case

The case is used to recharge at most 16 IMU-3C per batch. 4A charging current, fast charging.

SoloSW surface wave processing software

- Data transmission and dispersion analysis
- 1D/2D active surface wave analysis (MASW)
- 1D/2D passive surface wave SPAC and ESPAC method analysis





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General Specification

Analog channel	3
ADC resolution	24 bits
Sample intervals	0.25, 0.5, 1, 2, 4, 8, 10, 20 milliseconds
Preamplifier gain	0dB to 36 dB in 6 dB steps
Anti-alias filter	206.5 Hz @ 2ms (82.6% of Nyquist) - Linear Phase
DC blocking filter	DC Removed
GNSS mode	Support GPS, BEIDOU, Glonass, single or double mode operation
Operating temperature	-40°C ~ +70°C
Waterproof	IP67
Physical Size	136mm*120.7mm*88mm (w/o external 4G antenna)
Weight	1.4Kg
Data Storage	16 GB (extensible)
Operating Life@25°C	60h in 4G real-time transmission@2ms; 25 days working offline@2ms;
Data transmission mode	4G mode (4G, USB, WiFi)or Ethernet mode (Ethernet, USB, WiFi)
External power supply	7~ 15V DC (single supply)
Charging Temperature Range	+3°C ~ +45°C
Recharge Time	⩽7 h

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

Maximum Input Signal	±2.5Vpeak @ Gain 0dB
Equivalent Input Noise	0.18uV@2ms 18dB
Total Harmonic Distortion	⩽0.0002% @0dB
Instantaneous dynamic range	128dB
Common Mode Rejection	>100dB
Gain Accuracy	⩽0.5%
GNSS Time Standard	1ppm
Timing Accuracy	±10μs, GPS Disciplined
Cross Feed	< -110dB
System Dynamic Range	145dB
Frequency Response	0~1652Hz

SmartSolo®
IMU-3C Applications

- Urban underground space investigation
- Disaster and adverse geological investigation
- Geological structure investigation
- Geothermal and water resources survey
- Energy and mineral exploration
- Geological survey of rail transit
- Railway real-time monitoring
- Observation of short-period array
- Microseismic fracturing monitoring
- Vibration monitoring

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