



# HGS (INDIA) LIMITED



## SPECIFICATION SHEET – GEOTiny30/60/120

### Compact Digital Broad Band Seismometer

GEOTiny30/60/120 is a compact miniature digital broad band seismometer which integrates three seismic and three acceleration channels. It supports high resolution 24bit digitizer, embedded Linux OS and GPS or NTP timing. Seed link server ensures reliable real time data telemetry while large storage volume ensures long period local data recording. The instrument has very low power consumption so it can operate getting powered from a small 12Vdc battery. Due to its small size provides the ability to be buried underground. It supports capacitive transducer sensors and an adaptive analog integrator that allows the user to select between a variety of different sensor corner frequencies (120sec, 60sec, 30sec), while the high corner frequency remains high (80,100, 120Hz respectively) thus covering a very wide range of the seismic band. Design simplicity is the great advantage, and it is reflected to the price which is only fraction of the common commercial seismometers. The user can deploy even 100% more units than using common seismometers at same cost.

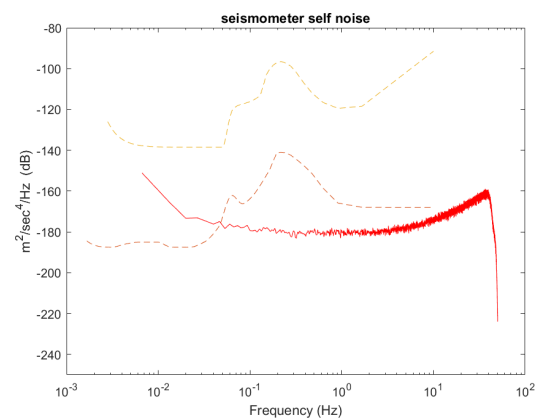
- Aftershock monitoring
- Regional seismicity monitoring
- Seismic tomography acquisition
- Induced seismicity monitoring
- Volcano monitoring
- Structural monitoring
- HVSR, MASW surveys
- Global Earthquake Monitoring

### System Features

- 3C seismic and 3C acceleration sensor
- DR: 155dB velocity. 97dB acceleration
- BB Response V:30-60-120sec, A: DC-550Hz
- Low power consumption
- Cost affordable design
- Only 130mm D/150mm H
- Integrated 24bit digitizer, 140dB
- Embedded Seed link & Earthworm Server
- Realtime Telemetry and Local Storage
- Mini Seed data format
- Linux open-source OS
- Web Interface Menu
- SSH, SFTP, HTTPS, CoAP, NTP
- Capacitive transducer sensor design
- Customized Sensor Corner Frequency
- High sensitivity 1500V/m/s
- Operation Range: -20 +65°C
- Waterproof IP67 aluminum case



*GEOTiny30/60/120*



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<b>GEOtiny30/60/120 Broad-Band Digital Seismometer Specifications</b>	
<b>Digitizer</b>	
Channels	Three seismic and three acceleration channels
A/D converter	Fourth Generation, Delta-Sigma, 24bits
Nonlinearity	+/-0.001%
Modulator	Fourth Generation, 4th order Delta-Sigma Modulator
Filter	Programmable, FIR filtering
Analog Input	Modular sensor board
Sampling Rate	1 to 1000 samples per second
Power	9-18Vdc, or 9-36Vdc, 2.3W
Autonomy	One week powered from a 12V/18Ah battery, 36days powered from a 12V/55Ah car battery
RMS Noise	140dB @ 100sps
<b>Communication</b>	
Telemetry	Ethernet port, WiFi
Connectivity	SEEDlink
LED	5 high brightness LEDs monitoring system SOH
Protocols	SSH, FTP, SFTP, Web Interface, TCP/IP, HTTP, HTTPS, PPP, MQTT, CoAP/CoAPS, NTP
<b>Integrated Capacitive Transducer Sensor Electronics</b>	
Bandwidth	120sec-80Hz / 60sec-100Hz / 30sec-120Hz
Technology	Capacitive transducer with Force-Balance feedback
Sensitivity	1500V/m/sec, Acc: +/-2g, +/-4g, +/-8g
Dynamic Range	Velocity >155dB, Acceleration > 97dB
<b>Data Recording</b>	
Media	Internal flash and Removable USB stick
Data File Type	Miniseed
Information File	System log file
Recording Mode	Continuous/Trigger or both
<b>Time Base</b>	
Type	GNSS receiver (GPS, GLONASS, WAAS, EGNOS, BeiDou, QZSS)/DPLL, GPS port
Accuracy Time	+/-1usec to UTC time pulse, +/-5 meters to position
Timing Sources	GPS, RTC, NTP
DPLL Drift	Less than 17usec between one hour GPS cycles
<b>Physical</b>	
Type	Surface Type
Dimensions	130mm diameter x 115mm length
Cable Length	Standard 5 meters, up to 50 meters
Mounting	Three adjustable legs
Weight	3.6kgr
Tilt	+/-2 degrees
<b>Environmental</b>	
Temperature range	-20 to +70 °C
Humidity	100%, IP67 enclosure



Ordering Information	
Item Description	HGS Part No.
GEOtiny30 (30sec-120Hz)	MK001267
GEOtiny60 (60sec-100Hz)	MK001268
GEOtiny120 (120sec-80Hz)	MK001242

*Version 1.0*



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