



HGS (INDIA) LIMITED

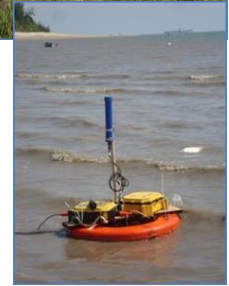


SPECIFICATION SHEET – SIGMA 3+ Recording System

The Robust and Versatile Nodal Seismograph

SIGMA 3+ Improvements:

- New Streamlined Case Design
- Smaller Size (60% less)
- Less Weight (40% less)
- Same excellent performance as Sigma Box



System Features:

- **Continuous Recording Standard:** For Monitoring and Autonomous Operation
- **Mesh Radio Network:** A low-power network for deployment, plus command & control of nodes
- **Cable, Wi-Fi, or Cellular Ethernet:** Provides “in the field” data offloading while recording
- **Hot-Swap External Storage Option:** For collecting data without interrupting operation
- **Hot-Swap Battery Option:** For changing batteries without interrupting operation
- **Battery Power Output:** For active sensors such as accelerometers and broadband sensors
- **Internal GPS:** For clock discipline and location information
- **VHF/Wire Timing Option:** For mining and other underground projects without GPS
- Rugged IP67 Case

Available Software:

- Active Source Acquisition
- Event Monitoring (Local or Remote)
- Long-Term Continuous Recording

Acquire Active Data:

- Vibroseis w/ Force 3
- Dynamite w/ BoomBox 3
- Impulsive w/ RTM 3

Acquire Passive Data:

- Hydraulic Fracture Monitoring
- Surface Wave Acquisition
- Long-term Permanent Monitoring
- Earthquake Monitoring

Original Sigma 3



New Sigma 3+



Sigma 3 Comparative Specifications			
Parameter	Gain	Sigma 3-3	Sigma 3-3+
Electronics			
Input Channels		3	3
PreAmp Gains		Low x1 (0 dB) High x16 (24 dB)	Low x1 (0 dB) High x16 (24 dB)
Maximum Input	Low Gain	5 volts P2P	5 volts P2P
	High Gain	0.313 volts P2P	0.313 volts P2P
Typical Dynamic Range @500sps	Low Gain	126 dB	126 dB
	High Gain	122 dB	122 dB
Typical Harmonic Distortion @500sps	Low Gain	0.0001%	0.0001%
	High Gain	0.0001%	0.0001%
Typical Noise Floor @500sps	Low Gain	0.8 uVolts RMS	0.8 uVolts RMS
	High Gain	0.08 uVolts RMS	0.08 uVolts RMS
Sample Rates		125, 250, 500, 1000, 2000 & 4000 sps	125, 250, 500, 1000, 2000 & 4000 sps
Sample Intervals		8000, 4000, 2000, 1000, 500 & 250 µSecs	8000, 4000, 2000, 1000, 500 & 250 µSecs
Low Cut Filters		Digital	Digital
High Curt Filter		85% Nyquist	85% Nyquist
Bandwidth		DC to 85% Nyquist	DC to 85% Nyquist
Maximum Trace Length		Continuous Recording	Continuous Recording
Input Impedance		20 kOhm	20 kOhm
Features			
External USB		Ruggedized 19-pin	Ruggedized 19-pin
Mesh Radio Network		Standard	Standard
100Base-Tx Ethernet		Ruggedized 10-pin	Ruggedized 10-pin
Internal Memory		8 Gbytes	8 Gbytes
Physical			
Power Requirement		0.4 watts/channel	0.4 watts/channel
Voltage Requirement		9-28 volts	9-28 volts
Case Type		ABS on Carbon Fiber	ABS
Size (volume 60% less)		292x337x102mm 11.5x13.25x4 in	271x286x55mm 10.7x11.3x2.2 in
Weight (40% less)		5 lbs (2.3 kg)	3 lbs. 2 oz. (1.4 kg)
Temperature Range		-40 C to 80 C	-40 C to 80 C

Ordering Information	
Item Discription	Part No.
Sigma 3-3+ Channels	MK000492

Version 1.0



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