

The sum of all cableless experience Continuous Seismic Recording System

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About Us

iSeis

From the home of Vibroseis, Ponca City, Oklahoma, some of the industry's most experienced seismic system design engineers set out to develop the world's first universal continuous recording seismic system. The result: unrivaled versatility and functionality, a system which has broken records in data acquisition -Sigma.

Only Sigma confronts the issues associated with integrated source control, flexible harvesting, GPS-based timing, system remote control, return of QC/ recording status and full data return. Sigma even has the feel of using the most fully capable traditional instruments but without reliance on digital spread cables.



1-3 inputs configuration ("KCK" style is shown)

Rope handle

Sigma has been used for almost every type of recording: from simple 2D to complex 3D with multiple vibrators fleets. Sigma's unique features make it the perfect choice for 3C, point receivers, geotechnical, passive, microseismic and permanent monitoring. It can be used on its own or deployed side-by-side with cable recorders using multiple sources. Only Sigma comes with the functionality to take on such a range of work.

Sigma

Sigma[™] is the most advanced, field-proven acquisition system in the world. It works seamlessly with Seismic Source Co. products and other controllers to provide the most fully integrated source control/recorder solution.

Sigma[™] unit construction

Serial number (Highly visible)

Status light Battery light

Ethernet connector (Wi-Fi, Cable, PC)

USB connector

Power connector (with hot-swap option)

Very rugged design

Sigma Software From automated layout to final Seismic Shot Records Sigma provides a complete integrated Software Solution

Tracking Group I		MAC	Box Id	Anchor 🔺	Sigma Status	Radio	Comm	Power	Free Memory	S	I
New Source Hag	0	0084EC	40274	8000 - 1128	ACTIVE	Good	Good	11.5 V	100%	~	1
Distance To Near Source Flag FFID 5978 5978 5978 5978 5978 5978 5978 5978	0	00841F	40295	8000 - 1131	ACTIVE	Good	Good	119V	100%	1	1
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Sweeping	0	0084B8	40264	8000 - 1137	ACTIVE	Good	Good	11.3 V	100%	1	1
Sweep Info Sweep Number Record Length	4	008435	40348	8000 - 1140	ACTIVE	Good	Good	10.2 V	99%	1	1
1 16000 ms	Sigm	a Troublesh	ooter Report	Friday Aug 1	2 20 Sigma Eq Sigma Box	count : 36	up Report Repeaters count	Friday Aug 12 2011 8	:39 AM	V Len = L	Page
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Vibrator system

Dynamite operation

Impulsive Sources operation





- Supports all high production Vibroseis modes
- Universal Encoder-II for all types of sources
- Slip-Sweep and ISS modes of operation

GPS-based flag-less operation

- Source Driven operation
 - SPS driven

- **Data Harvest Software**
- Reads Survey and Geometry from ASI file, generated by Sigma Observer
- Reads acquired Sigma Data files
- Outputs Final Gathers in SEG-Y or SEG-D Data Formats

- Passive and Active solution
- 24-bit digital Pilot Reference
- Field correlation and diversity stack
 DC coupling available for improved
- low frequency



Sigma™ Versatility

Sigma Unit

- 1 to 3 Channels or 3C Sensor
- GPS (or VHF) Clock control
- Built-in MRN for Unit Configuration, Recording Status and Power Control

Layout Options

- Autonomous Operation using Internal Storage
- Mesh Radio Network option for "Real-Time" status, Command and Control
- Ethernet (Wi-Fi or Cable) Option for "Real-Time" Data Return
- USB External Storage for Fast Data Collection
- Sigma Float for Transition Zone jobs. Contains Sigma, Wi-Fi and Battery



Small Footprint for Sensitive Environment - Sigma MRN provides recording status and Wi-Fi Drive-by allows download without directly visiting Receiver Station



Mesh Radio Network for setting Recording Parameters, Deploying channels, starting Self-Test, commanding On/Off and reporting Status back, including Real-Time Noise Monitor



"Cable-free" for **Transition Zone** and other **Difficult Access Areas** Sigma can be set-up with Wi-Fi or USB fast access external storage

Passive and Microseismic Monitoring

Today's **Passive Monitoring** requirements far exceed those found on even the most advanced active land operations. Instrumentation used for traditional surveys is not easily converted to passive acquisition. Sigma has a variety of features which uniquely enable it to undertake all forms of passive and microseismic recording, as well as any active recording challenge.

Permanent Passive Monitoring Station with directional Wi-Fi antenna for Real-time data return



Sigma™ Data Collection Options



Drive-by Wi-Fi Download

- USB Memory Swap
- Direct Data Connection Download

User friendly Software provides clear view of download progress

0000	1086	Finished	158	158	158	0	0:01:03	2.42
8000	1131	Downloading	41	167	40	0	0:00:09	5.56
8000	1134	Downloading	36	166	35	0	0:00:07	7.54
8000	1137	Downloading	36	168	35	0	0:00:07	8.02
5000	1019	Idle	0	0	0	0		1
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Sigma USB Data Collection

- Convenient and Simple
- Rugged Construction for Outdoor use
- Simply Replace USB and proceed to next station
- Download Data from USB in truck or at the office

Part of any spread or line can be setup to return seismic data in "real-time". Wi-Fi or Cable connections are managed by **RTR Program**



RTR maintains network connections and automatically retrieves seismic data. For active projects, RTR outputs records based on information from Sigma Observer™ program. For passive acquisition, RTR outputs concurrent files for the duration of that project.



Sigma SPECIFICATIONS

GENERAL

ACQUISITION

Selectable Gains	0 dB and 24 dB standard (software selectable)			
Sample Rates	0.25, 0.50, 1.00, 2.00, 4.00, 8.00 milliseconds			
Maximum input	±2.5 volts @ 0 dB gain			
Dynamic Range	144 dB system, greater than 127 dB at 4 msec sample rate			
Noise Floor	0.1 microvolts RMS at 2 msec sample rate			
Total Harmonic Distortion	0.0005%			
Common Mode Rejection	0.001%			
Anti-Alias Filter	-3 dB, 0.87 Nyquist - Linear or minimum phase (software selectable)			
Input Impedance	20 KOhms			
Gain Accuracy	1%			

ENVIRONMENTAL

Operating temperature range	-40°C to +85°C
Humidity	0 to 100%. Internal humidity reported over Mesh Radio
Active Power Consumption	480 mW/channel recording Full Power Mode
Sleep Power Consumption	1 mW/channel
Size	11.25" x 13" x 3" (286 x 330 x 76 mm)
Weight	7 pounds (3.2 kg)

Specifications subject to change without notification

Ver. 2/11



USA: International Seismic Co., 2391 E. Coleman Rd., Ponca City, OK 74604, Phone: +1 580 762-8233, Fax: +1 580 762-1785 email: mail@i-seis.com, www.i-seis.com

EAME: Seismic & Oilfield Services Ltd., Unit 3 Cypress Court, Sunbury on Thames, Middlesex, TW167EL, UK. Phone: + 44 1372 842060 Canada: Global Seismic Repairs Inc., 4405A - 75th Ave SE, Calgary, Alberta T2C2K8, Canada. Phone: +1 403 252 7552

India: Toshniwal Bros (Delhi) Pvt. Ltd., Mohit House SC-II, D-3 Mansarovar Garden, New Delhi 110015, India. Phone: +91 11 4553 1692
 China: Beijing Communication Office, Building F-2608, Zi Zhu Hua Yuan, No 88 Zi Zhu Yuan Lu, Hai Dian District, Beijing 100089,

P.R.China Phone: +86 10 8855 2956, Cell: +86 139 1158 1756