GEOSYN / KMS 870-VectorSeisEM Broad Band - Ocean bottom station

BB seismic/electromagnetic system

Product description

KMS Technologies, an electromagnetics technology provider, has teamed up with Geosyn International that has over 20 years of ocean bottom seismic operations and integrated interpretation experience. This results in novel patented technology in electromagnetics and ocean bottom seismics that uses well proven components.

We are providing, VectroSeisEM, a broad-band (BB) 4C seismic/ 6 C electromagnetic node for shallow and deep-water geophysical applications. The BB Seismic/EM system can be operated in a passive or active mode. Active source operations require an air gun or controlled EM source of appropriate frequency band.

KMS initially developed the EM sensor technology as marine cable, implementing this in the KMS-820 land wireless array magnetotelluric system, which is commercially used in more than a dozen countries.

GEOSYN provides the BB seismic sensor, marine packaging and based on over 20 years of shallow and deep-water seismic operation experience.

The BB Seismic/EM system is mechanically optimized to satisfy all technical requirements for simultaneous acquisition of seismic and electromagnetic data. This technical advancement permits a tuned modeling and interpretation procedure of both data sets at the same time, minimizing acquisition cost.

Highlights

- Broad band seismic / electromagnetic receiver
- Seismic: 1Hz to 300 Hz or 60 s to 50 Hz
- Electromagnetics: DC – 180 Hz
- 4C seismic sensors
- 5 (6) C electromagnetic sensor (2 or 3 E-fields and 3 H-fields)
- Low noise input: 0.3 nV/sqrt (Hz)
- Memory: 32/64 GB standard SD card
- Telemetry wireless or cabled for onshore operations
- Battery life sufficient for 2 months continuous recording, extendable if requested
- Atomic clock synchronization with GPS before and after deployment
- Acquisition scheduler file saved in SD card enables flexible operation

Applications

- Oil exploration
  - Sub-basalt and sub-salt imaging
  - Basin mapping
- Reservoir monitoring
- Crustal studies

KJT Enterprises Inc.
11999 Katy Freeway, Suite 200
Houston, TX 77079
USA

Tel: +1.713.532.8144

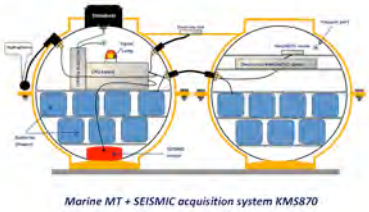
Email: info@KMSTechnologies.com
www.KMSTechnologies.com

GeoSyn International
Geophysical Instruments & Services Ltd
Nicosia, Cyprus

Contact through
KMS Technologies

BB Seismic/EM system Technical Specifications

Frequency bandwidth	Seismic: 1 Hz – 300 Hz or 60 s to 50 Hz Electromagnetic: DC - 180 Hz
Sampling rate	Seismic sensor: variable selectable EM sensor: up to 4 kHz customizable selectable
A/D resolution	32 bit
Input range	-2.5 V ~ + 2.5 V
Communication protocol	Long-range wireless
Supply voltage	+5 – 24 V DC
Power consumption	Typical < 2.5 W
Operating temperature range	-25° to 85° C
Packaging	Glass sphere
Water depth	Up to 9000 m
Recording time with refloating	2 months
Timing accuracy	$\pm 10^{-9}$ s



Marine MT + SEISMIC acquisition system KMS870

Patents

- Strack, K.M., L.A. Thomsen, and H. Rueter, 2007, Method for acquiring transient electromagnetic survey data, **US 07203599**. (EM & seismic acquisition)
- Strack, K. M., H. Rueter, and L. Thomsen, 2008, Integrated earth formation evaluation method using controlled source electromagnetic survey data and seismic data, **US 07328107**. (combining seismic & EM in inversion).
- Loekhen, J., K.M. Strack, S. Helwig, and T. Hanstein, 2009, Multi-component marine electromagnetic signal acquisition method, **US 2009/0243616 A1**.
- Strack, K.M., I. McMillan, and S. Helwig, 2010, Buoy-based marine electromagnetic signal acquisition system, **US 7705599**.
- Patents and derivative patents are filed also in other geographic territories.