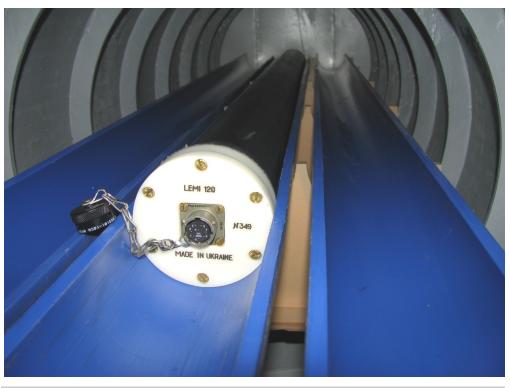
Laboratory for ElectroMagnetic Innovation



Exceeding expectations



About us

The **Laboratory of Electromagnetic Innovations (LEMI)** was founded 2008 as a joint venture between KMS Technologies and the Lviv Centre of Institute for Space Research (LCISR) to focus on the development and production of high quality electromagnetic (EM) sensors. LEMI is located in Lviv, Ukraine. To learn more

Mission

The mission of the joint venture is to produce the highest quality geophysical EM sensors with the lowest noise figure on the market, at competitive prices. The primary product lines are low noise custom EM induction coil magnetometers and custom fluxgate magnetometers. These sensors may be optimized for use in marine and land magnetotelluric (MT) and controlled source EM (CSEM) measurements.

Products

LEMI is specialized in high quality, low noise sensors for a wide variety of applications including geophysical field measurements, satellite navigation, signature detection and UXO recovery.

- EM induction coil magnetometers
- □ Custom fluxgate magnetometers
- Potential free electrodes
- Geophysical recorders
- Sensor calibration systems
- Specialty equipments for electriomagnetic measurement

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Fluxgate magnetometers

LEMI-011

Low power 3-components fluxgate magnetometer. Manufactured in two versions: monoblock ("tube and "box" shape, sensor included) and as a p.c. board and sensor with cable up to 3 m. Convenient for orientation purposes.

LEMI-019

Ultra-low power consumption featuring two analog outputs - filtered (0.003-10 Hz) and unfiltered (from DC).

A miniature one-component fluxgate magnetometer intended for the measurement of one component of the magnetic field vector in land conditions.

LEMI-022

High resolution and precision with low noise and low temperature offset including both digital and analog outputs.

A vector magnetometer for the precise measurement of Earth's magnetic field and its variations at laboratory and land conditions.

LEMI-024

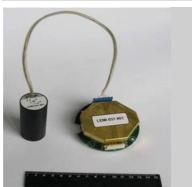
A three-component low power high sensitive analog fluxgate magnetometer intended for the monitoring of three components of the magnetic field vector. Including a DC unfiltered output, used for rough estimating of magnetic field intensity, and high sensitivity filtered output, for weak fluctuations measured in the frequency band of 0.003-10 Hz.

LEMI-031

A three-component ultra low power with low temperature drift.

Intended for the monitoring of the three components of magnetic field vector and its variations in both land and laboratory conditions. Designed for battery-powered applications. A differential analog output can be easily converted to digital using an A/D convertor.





2







Coil magnetometers





LEMI-118

High frequency induction coil magnetometer with low noise and low power consumption. Intended for the study of magnetic field fluctuation in the frequency band 1Hz to 70,000 Hz.

LEMI-120

Broadband (0.0001- 1,000 Hz) low frequency induction coil magnetometer with the lowest noise in class.

A broadband land induction coil that was developed to measure variations of the Earth's magnetic field, particularly for applications in Magnetotellurics (MT) and Controlled Source Magnetotellurics (CSMT).



LEMI-121

Very low noise combined with low power consumption and compact design (560 mm length) induction coil magnetometer. Intended for the study of magnetic field fluctuations in the frequency band 0.0001-500 Hz, can be used instead of the LEMI-120 magnetometer due to size and weight criteria.



LEMI-123

Low noise and low power induction coil magnetometer optimized for packaging into size limited acquisition stations (25 mm length). Designed to measure magnetic field variations in the frequency band from 1 Hz to 1000 Hz.



LEMI-134

High frequency (0.5 - 200,000 Hz) with extremely low noise, compact and lightweight induction coil magnetometer.

New calculation methodology based on a minimum mass approach enabled us to minimize the weight while conserving the length necessary to provide low noise levels in a wide frequency band.

nT Unfiltered +L- 60,000 nT Infiltered +L- 60,000 nT Infiltered LOC - 15 Hz Infiltered DC - 16 Hz Infiltered DC - 16 Hz Infiltered DC - 16 Hz Infiltered DC - 200 nT Infiltered DC - 300 Hz Infiltered A m/\nT Infiltered A m/\nT Infiltered DC - 300 Hz Infiltered A m/\nT Infiltered A m/\nT <th>Sensor</th> <th>LEMI-011</th> <th>LEMI-019</th> <th>Fluxgate</th> <th>LEMI-024</th> <th>LEMI-031</th>	Sensor	LEMI-011	LEMI-019	Fluxgate	LEMI-024	LEMI-031
tory range 0 - 20 Hz Unfiltered DC - 15 Hz 0 - 0.05 Hz Unfiltered DC - 500 Hz D - 0.05 Hz Unfiltered DC - 500 Hz D - 0.05 Hz Unfiltered DC - 500 Hz D - 0.05 Hz Unfiltered DC - 500 Hz D - 0.05 Hz Unfiltered DC - 500 Hz D - 0.05 Hz Unfiltered DC - 500 Hz D - 0.05 Hz I - 0.00 Hz D - 0.05 Hz I - 0.00 Hz D - 0.05 Hz S - 0.05 Hz I - 0.00 Hz D - 0.05 Hz S - 0.05 Hz	Measurement range	+/- 50,000 nT	Unfiltered +/- 60,000 nT Filtered +/- 15 nT	+/- 68,000 nT	Unfiltered +/- 80,000 nT Filtered +/- 200 nT	+/- 53,000
Interaction Untiltered 0.05 mV/nT Analog 2.4 mV/nT Untiltered 0.056 mV/nT Interact 2.0 mV/nT Interact 2.2 mV/nT Interact	Frequency range	0 - 20 Hz	Unfiltered DC - 15 Hz Filtered 0.02 - 5 Hz	0 - 0.03 Hz	Unfiltered DC - 500 Hz Filtered 0.003 - 10 Hz	DC - 15 H
wei 0.1 nT / \Hz @ 5 Hz st 1 pT /\Hz @ 1 Hz < 10 pT / \Hz @ 1 Hz s 0 pT /\Hz /\TT s 0 pT /\Hz /\TT s 0 pT /\TT p pT /\TT <thp \tt<="" pt="" th=""> p pT /\TT <thp <="" \tt<="" pt="" td=""><td>Sensitivity</td><td>45 mV/nT</td><td>Unfiltered 0.05 mV/nT Filtered 270 mV/nT</td><td>Analog 2.4 mV/nT Digital resolution 0.033 nT</td><td>Unfiltered 0.056 mV/nT Filtered 22.4 mV/nT</td><td>0.6 mV/nT</td></thp></thp>	Sensitivity	45 mV/nT	Unfiltered 0.05 mV/nT Filtered 270 mV/nT	Analog 2.4 mV/nT Digital resolution 0.033 nT	Unfiltered 0.056 mV/nT Filtered 22.4 mV/nT	0.6 mV/nT
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Online Onlin Onlin Onlin <td>Dimension</td> <td></td> <td>Censor</td> <td>Consor with support 9.7 kg</td> <td>Censor w/o cable</td> <td>Concor</td>	Dimension		Censor	Consor with support 9.7 kg	Censor w/o cable	Concor
Monoblock "tube" Box		50 X 16 X 16 mm	60 mm (L), 17 mm (D)	Electronic unit 1.8 kg		70.5 m
Iso X 20 X 7 mm 100 X 20 X 40 mm Int X 50 X 67 mm Int X 75 X 67 mm Int X 75 X 67 mm Wonoblock "box" Int X 50 X 27 mm Int X 10 X 75 X 67 mm Int X 10 X 75 X 67 mm Vertice LEMI-118 LEMI-120 LEMI-121 LEMI-123 LEMI-12		Monoblock "tube"	Box			Electronic
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ancy range 1 - 70,000 Hz 0.0001 - 1,000 Hz 0.001 - 500 Hz 1 - 1,000 Hz 1 - 1,000 Hz formation Linear section F1 and f1 - 100 or 200 mV/nT f1 c 200 mV/nT F1 and f1 - 100 or 200 mV/nT f1 c 20 mV/nT F1 and f1 - 100 or 200 mV/nT f1 c 2 mV/nT f1 c mV	Sensor	LEMI-118		LEMI-121	LEMI-123	LEMI-134
ancy range 1 - 70,000 Hz 0.0001 - 1,000 Hz 0.001 - 500 Hz 1 - 1,000 Hz 1 - 1,000 Hz ormation Linear section F - 0.2 mV/nT f + 0.2 mV/nT F - 0.2						0.5 - 50,00
ormation Linear section Inear section Inear section Inear section Linear section Linear section Linear section Inear	Frequency range	1 - 70,000 Hz	0.0001 - 1,000 Hz	0.001 - 500 Hz	1 - 1,000 Hz	0.5 - 200,0
f * 1 mV/nT f * 100 or 200 mV/nT f * 200 mV/nT f * 200 mV/nT f * 0.2 mV/nT f * 0.2 mV/nT F action F at section F at sectin F at sectin F at se	Transformation factor	Linear section	Linear section	Linear section	Linear section	Linear sec
Flat section Flat sectin ////////////////////////////////////		f * 1 mV/nT	f * 100 or 200 mV/nT	f * 200 mV/nT	f * 0.2 mV/nT	f * 4 m
20 mV/nT 100 or 200 mV/nT 200 mV/nT 20 mV/nT 1 Hz \$ 0.01 Hz \$ 0.01 Hz \$ 0.00 Hz \$ 0.00 Hz \$ 0.05 pT/vHz 1 Hz \$ 0.1 Hz \$ 0.1 Hz \$ 0.01 Hz \$ 0.05 pT/vHz 1 Hz \$ 0.1 Hz \$ 0.01 Hz \$ 0.05 pT/vHz 1 Hz \$ 0.02 pT/v		Flat section	Flat section	Flat section	Flat section	Flat section
evel 1 Hz \leq 5 pT/Hz 0.001 Hz \leq 100 pT/Hz 0.001 Hz \leq 600 pT/Hz 1 Hz \leq 8 pT/Hz 10 Hz \leq 0.2 pT/Hz 0.01 Hz \leq 10 pT/Hz 0.01 Hz \leq 5 pT/Hz 10 Hz \leq 0.5 pT/Hz 10 Hz \leq 0.5 pT/Hz 10,000 Hz \leq 0.001 pT/ Hz 1 Hz \leq 0.1 pT/Hz 0.01 Hz \leq 0.05 pT/Hz 10 Hz \leq 0.05 pT/Hz 100 Hz \leq 0.05 pT/Hz 50,000 Hz \leq 0.001 pT/ Hz 100 Hz \leq 0.01 pT/Hz 100 Hz \leq 0.05 pT/Hz 100 Hz \leq 0.02 pT/Hz 50,000 Hz \leq 0.001 pT/ Hz 100 Hz \leq 0.01 pT/Hz 100 Hz \leq 0.02 pT/Hz 1000 Hz \leq 0.02 pT/Hz 50,000 Hz \leq 0.001 pT/ Hz 100 Hz \leq 0.01 pT/Hz 100 Hz \leq 0.5 pT/Hz 1000 Hz \leq 0.02 pT/Hz 50 mm (L) 225 mW 1340 mm (L) 560 mm (L) 255 mm (L) 42 mm (D) 85 mm (D) 85 mm (D) 48 mm (D)		20 mV/nT	100 or 200 mV/nT	200 mV/nT	20 mV/nT	20 mV
	Noise level	1 Hz ≤ 5 pT/√Hz	0.001 Hz ≤ 100 pT/√Hz	0.001 Hz ≤ 600 pT/√Hz	1 Hz ≤ 8 pT/√Hz	
		10 Hz ≤ 0.2 pT/√Hz	0.01 Hz ≤ 10 pT/√Hz	0.01 Hz ≤ 5 pT/√Hz	10 Hz ≤ 0.5 pT/√Hz	
50,000 Hz $\leq 0.001 \text{ pT/}$ 100 Hz $\leq 0.01 \text{ pT/Hz}$ 1000 Hz $\leq 0.02 \text{ pT/Hz}$ \sqrt{Hz} 225 mW 116 mW 65 mW sion 800 mm (L) 1340 mm (L) 560 mm (L) 255 mm (L) 42 mm (D) 85 mm (D) 85 mm (D) 48 mm (D)		10,000 Hz ≤ 0.005 pT/ √Hz		100 Hz ≤ 0.05 pT/√Hz	100 Hz ≤ 0.05 pT/√Hz	
≤ 240 mW 225 mW 116 mW 65 mW sion 800 mm (L) 1340 mm (L) 560 mm (L) 255 mm (L) 42 mm (D) 85 mm (D) 85 mm (D) 48 mm (D)		50,000 Hz ≤ 0.001 pT/ √Hz	100 Hz ≤ 0.01 pT/√Hz		1000 Hz ≤ 0.02 pT/√Hz	
800 mm (L) 1340 mm (L) 560 mm (L) 255 mm (L) 42 mm (D) 85 mm (D) 85 mm (D) 48 mm (D)	Power	≤ 240 mW	225 mW	116 mW		300 mW
85 mm (D) 85 mm (D) 48 mm (D)	Dimension	800 mm (L)	1340 mm (L)	560 mm (L)	255 mm (L)	400 mm (I
		42 mm (D)	85 mm (D)	85 mm (D)	48 mm (D)	10 mm (D)

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