

NUTEM HELICOPTER BORNE TIME DOMAIN EM SYSTEM



NuTEM™ is a versatile state-of-the-art time-domain helicopter-borne electromagnetic system well suited for mineral and groundwater exploration, geological mapping and environmental applications. Its small footprint and compact size allows the system to be deployed easily and assembled quickly for minimal set up and calibration time.

Benefits

- Powerful compact transmitter
- Three component receiver (x,y,z)
- Lightweight and rigid frame
- Easy operation and mob in rough terrain
- Scalable to a wide range of helicopters
- Easy helipad and hangar storage
- Easy assembly and installation
- Small loop footprint
- Improved spatial resolution
- Full wave-form recorded data
- User Selected Programmable windows

Key figures

1400 A ➔ Peak Current

325,000 NIA
➔ Peak Dipole Moment

400 m +
➔ Estimated Depth penetration

Specification Highlights

- NuTEM system has semi- sinusoidal shape transmitter pulse
- Transmitter frequency can be adjusted to 25Hz or 75Hz in a 50Hz environment; 30Hz or 90Hz in a 60Hz environment
- NUTEM system records the raw data coming from an XYZ receiver and a transmitter current monitor continuously (ON-time and OFF-time)
- Recorded Raw data can be converted to windows (time channels) of any times and width, according to geological requirements

Technical Specification

Transmitter (Tx)	Rigid, Aluminum tubes
Tx Coil	Vertical axis
TC Coil Diameter	8.6 m
Number of Turns	4
Pulse Shape	Half-sine
Pulse Length	Approx. 4 ms for 25/30Hz; 1.5 ms for 75/90 Hz
Base Frequency	25 or 30 Hz
Optional base frequency	75 or 90 Hz
Peak Current	1,400 A
Peak Dipole movement	325,000 NIA
Estimated penetration	400 m +
Power supply	Independent on loop
System suspension	one tow rope, single point suspension
Tx elevation over ground	30 m
Weight	350 Kg (configuration dependant)
Helicopter type	AS350 Series preferred
Survey Speed	90 Km/h- standard
Receiver (Rx)	X, Y, Z
Position of Receiver	Mid-tow rope, asymmetrical
Rx elevation over the ground	60m (for standard setup)
dB/dt	Yes
B-field	Yes
Data Extraction (programmable windows), QC and processing	Done in post processing immediately after each flight
Data recording	Full wave form recording
Sample rate	90kHz
Data resolution	11 μ S/sample @ 30 Hz base frequency
Industrial noise rejection	60 or 50 Hz, cancelling
Additional Tx info	Tx Current monitor channel
Tx pulse control	Yes
Sensors on Tx loop	GPS, Laser Altimeter
Rigid system	Designed to operate in Flat or rugged terrain
Installation time	2-4 hrs; 2 persons



EMDataView

The EM Data Extraction and visualization program, which is with the NUTEM system, allows the user to perform post-mission data processing and extraction, including noise-reduction, data recalculation and extraction of time-channels.

Key Features:

- Windows-based platform
- Data analysis and QC
- Pulse shape export
- External noise suppression
- Advanced de-noising algorithm
- Flexibility in time-channels extraction
- Output data sets can be imported into Oasis Montaj; EM Flow
- Maxwell or other processing and interpretation software

