

NUTEM HELICOPTER BOURNE 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

300000 NIA
➔ Peak Dipole Movement

300 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 | 300,00 NIA |
| Estimated pentation | 350 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 µS/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

