



Fast. Simple. Precise.

The eQube™ is a highly accurate, broadband, stable capacitive electric-field sensor that operates in a wide variety of environments and challenging terrains for both fast and long-term surveys.

As of early 2017 eQube™ sensors have been deployed around the world on 22 plays in 12 basins and have been used to collect **over a million measurements**.

The eQube™ has been patented in the US and Mexico, is granting in Australia, Canada, and Russia, and is pending worldwide.



The sensor response covers a wide frequency band (0.6mHz to 10KHz) and can be customized for frequencies outside the existing bandwidth for specialized applications. eQube™ sensors perform comparably across a wide variety of locations and terrains. While performance can degrade when there are sources of high cultural noise (as seen at 60, 120, and 180 Hz) or at your operational frequency, data of sufficient quality can be achieved by moving systems away from cultural noise sources, changing the operational frequency, making the signal high enough to achieve acceptable Signal to Noise Ratio (SNR), and/or noise filtering.

Difficult Conditions & Sensitive Environments

The eQube™ does not need an electrochemical interaction with the Earth, and can be placed directly on the surface without burial making it ideal for areas where the ground can't be disturbed and other tough conditions:

- + Challenging Terrains – eQube™ sensors function well in a variety of lithologic and ground types where other electric-field sensors do not. This includes desert, frozen tundra, gravels, volcanic rock, and more. Additionally, readings in more common sediment and soil types such as most grass and farm land are achievable.
- + Weather Conditions – eQube™ sensors operate in extremely hot and cold weather as well as in mild and moderate conditions. As of early 2017 measurements have been taken in temperatures as hot as 110° F (43° C) and as cold as -15° F (-26° C).



How They Work

The eQube™ sensors employ a chemically inert electrode plate that couples to the electric potential in the earth via capacitive coupling (rather than ionic exchange with the local earth). The coupling is a purely electromagnetic phenomenon, which has no temperature, ionic concentration or corrosion effects.

The eQube™ employs ultra-high impedance feedback techniques that provide a high level of immunity to the sensor-to-ground contact impedance, and thereby produce unprecedented measurement fidelity. The key performance characteristic is that the sensor output to a constant signal (its accuracy) does not vary with the ground resistance. This enables rapid deployment and stability in all terrains and changing ground environments caused by varying weather conditions, ground compaction, and ground fissuring.



Complex Geologies & Deep Targets

The eQube™ is 100x more stable than industry state-of-the-art electric-field sensors.

- + Complex Geologies & Deep Targets – eQube™ sensor precision is vital when looking at deep targets and areas with complex geology that limit signal strength at the surface.
- + As of early 2017 signals have been seen as deep as 13,500 ft (4,000 m) true vertical depth with eQube™ sensors.

Need for Speed

Because the eQube™ sensor is designed for rapid deployment – requiring no burial and taking only seconds to settle – it is ideal in circumstances where fast cycle times, small crews, or minimal material and gear is desirable:

- + Remote or distant locations
- + Sites that are difficult to access with heavy equipment
- + Large projects



Health, Safety & Environment

GroundMetrics eQube™ sensors pose no risk to people, property, or the environment. The system is safe enough to operate in populated and developed areas and does not involve human or animal detectable emissions. eQube™ sensors are safe to deploy, do not disturb the ground, and are ideal in regions where environmental invasion should be minimized or permitting is difficult.