

Abstract (paper not available)

GSTP Development of a Space Qualified Multi-Needle Langmuir Probe for High Spatial Resolution Measurements of Electron Density and Platform Potential

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Eidsvoll Electronics AS has developed a space qualified multi-Needle Langmuir Probe (m-NLP) for high spatial resolution measurements of electron density and platform potential. The instrument development has been supported through the ESA GSTP programme. The instrument can sample electron density and the spacecraft floating potential at sampling rates up to 5 kHz, i.e. close to meter scale resolution in low earth orbit. This opens up entirely new possibilities for better knowledge of plasma structures and instabilities, and their impact on both radio wave propagation and spacecraft charging. The m-NLP instrument is designed for at least 10 years of operation in LEO up to 1000 km altitude.
