

The effect of proton radiation on the EMCCD for a low Earth orbit satellite mission

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ABSTRACT

We report on the proton radiation effects on a 1k x 1k ev2 EMCCD utilized in the Nüvü EM N2 1024 camera. Radiation testing was performed at the TRIUMF Proton Irradiation Facility in Canada, where the e2v CCD201-20 EMCCD received a proton fluence emulating a 10 year maximum mission in low earth orbit with nominal shielding that would be expected from a small or microsatellite. The primary space-based application is for space situational awareness (SSA), where a small telescope images faint orbiting RSOs (resident space objects) on the EMCCD.

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