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DEVELOP OF AN ADAPTIVE GMSK MODULATOR USING SDR TECHNIQUES IMPLEMENTED IN A FPGA.

Abstract

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In this work an adaptive GMSK modulator is developed, using SDR techniques implemented in FPGA, specifically in a Basis 3 Board. The goal of this modulator it is to be used in a Leo micro or nano satellite. Due to the mechanic of the orbit, the quality of the signal and SNR varies with the altitude of the satellite, so an adaptive modulation scheme is used in order to take advantage of the best channel conditions. Also the design is endow with fault tolerance. Due to the effects radiation may have over this kind of electronic, it is necessary to provide a level of reliability to the system that allow it to perform in space applications.