

# FPGAs in Space Environment and Design Techniques

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# Goals

- Brief overview of the radiation environment
- What type of radiation effects are there?
- How are devices tested?
- How should the results be interpreted?
- How can we protect our systems?

# Outline

- Environment and Effects
- Total Dose
- Single Event Upset
- Single Event Latchup
- Single Event Transient
- Antifuse and Rupture
- Protons
- Loss of Functionality
- Miscellaneous