



## Overview









Top-level

**ESD** devices

- 1. About ESD
- 2. Padring with the ESD perspective
- 3. IC-level ESD concept
- 4. Onchip protection devices
- 5. Review of ESD support in selected standard libraries
- 6. Design adaptation, custom pads and devices
- 7. Radiation hardening of IO pads
  - A) Cumulative effects
  - B) Single event latchup
- 8. ESD testing





