LORIS – Command & Data Handling Subsystem
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On-Board Computer for Low-Earth Orbit Satellites

Introduction
LORIS is a CubeSat class spacecraft, being designed by Dalhousie Space Systems Lab for launch in 2021. This project’s goal was to design and manufacture the first generation of the On-Board Computer (OBC) that will fly onboard LORIS. OBC refers to a computer unit flying on board a satellite which provides processing capability. It is the board, consisting of microprocessor, non-volatile memories, volatile memories and the companion chip that connects the microprocessor to different peripherals.

Design Specifications
Low Profile, Power Efficient System-on Chip (Soc) Single Board Computer, With Fast Processing Functions And Multi Purpose Input / Output

- Single core NXP/Freescale i.MX6DL
- 4GB eMMC Flash Storage
- Temperature range: -40° to 85°C
- 800 MHz operational frequency
- 256MB(32 Bit) DDR3 RAM
- USB 2.0, SPI, I2C, PWM, UART, GPIO, ADC
- SODIMM 200 Connector
- 72 grams, 64 mm x 35mm

Future Plans
- Finalize the Test Plan
- Perform Full Scale Hardware Test
- Perform OS Compatibility Test
- Finalize Design & Training Documentation
- Prepare Flight Readiness Test Plan

References