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Connected FPGA Thermal Monitoring

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Connected FPGA Thermal Monitoring

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Abstract

Field Programmable Gate Arrays (FPGA) are configurable integrated circuits. One area that is very important in integrated circuits is temperature control. Improper heat control can lead to a decreased lifespan and possible failure of the device. Many different circuits can be created on the FPGA to suit a specific project or need. Due to FGPAs being configurable, it is hard to create efficient cooling methods. Our project seeks to monitor the FPGA’s temperature with different configurations to eventually increase the efficiency of the thermal management system.

To accomplish this, we programmed a system on the chip system onto the FPGA in order to be able to communicate with sensors. We connected the system to an internal and ambient temperature sensor. We then connected the system to a wireless module that uploads to Adafruit IO and can be monitored in real time.