~~Our cubesat system receives information from a microcontroller which is collecting environmental information from sensors, this information is then modulated and sent through the SDR to the antenna to be turned into a signal. Our ground station then receives signal with an antenna which is honed in on our satellite, unnecessary noise is filtered out with an LNA, and then the received signal is demodulated by the SDR and this information is then processed by locally hosted software on the ground station and converted back into the original format.~~

Our cubesat system operates as a well-coordinated information relay, starting with a microcontroller gathering environmental data from various sensors onboard the satellite. This collected data is then transformed into a modulated signal through our Software-Defined Radio (SDR) before being transmitted via an antenna. At the receiving end, our ground station is equipped with a specialized antenna tuned to our satellite's frequency. To ensure the purity of the incoming signal, we employ a Low-Noise Amplifier (LNA) to filter out unwanted interference. The SDR at the ground station then demodulates the received signal, making the original data accessible. This decoded information is subsequently processed by locally hosted software, ultimately restoring it to its original format. This streamlined process ensures a reliable flow of information between the satellite and ground station.

Ground station subsystem -

~~The ground station subsystem is responsible for capturing signals from our satellite. The antenna is pointed in the direction of our satellite and receives radio signals. The LNA filters out signals such as nearby FM Radio stations and other radio traffic which is not relevant to us. The signal is then sent to the SDR which is tuned to the specific frequency that we had transmitted the data from the cubesat. This information is then sent to the Raspberry Pi which hosts the SatNOGS ground station software.~~

The ground station subsystem is responsible for precisely capturing signals from our satellite. Its antenna is carefully aimed at the satellite, enabling it to pick up radio signals accurately. To ensure data purity, the Low-Noise Amplifier (LNA) acts as a filter, eliminating unwanted signals like nearby FM radio stations and other radio traffic that isn't relevant to our mission. The filtered signal is then passed to the Software-Defined Radio (SDR), which is configured to the specific frequency we used for data transmission from the cubesat. This configuration ensures a proper match between the captured signal and our satellite's transmission. Next, the signal is transmitted to the Raspberry Pi, which hosts the SatNOGS ground station software. This software is instrumental in handling and processing the data, making it accessible and facilitating the essential communication between the ground station and the satellite.