What is a CricketSatellite?

The CricketSatellite is a Space Temperature Module that relays a Frequency (433 MHz) to the receiving antenna.

1. The CricketSatellite will transmit signals towards the receiving antenna.
2. The antenna captures signals from the satellite.
3. The HDSDR application within the ground station laptop simulates a radio and receives the signals.
4. The Spectrum Lab application interprets signals within HDSDR in a form of sound waves to measure its actual frequency.

Launch Procedures

- Laptop and extension monitor via HDMI
- Helium Balloon
- USB-SDR for HDSDR Application
- Spectrum Lab Application

Ground Station Procedures:

1. Connect the Yagi Antenna to the USB-SDR with a coaxial cable.
2. Tie the satellite to the balloon.
3. Verify the connection has been established between The CricketSatellite and all laptop software.
4. Release the balloon with the satellite attached.

Flight test results

Data was recorded every ten seconds.

Conclusion

The CricketSatellite Project requires students to execute tasks such as the following:

- Solder Circuit Board
- Understand Basic Electronic Components
- Interpret Bandwidth, Frequency, Sound-noise ratio effects

Learn the Basic Functions of the following:

- Antennas
- Software-Defined Radio (SDR)
- Printed Circuit Board (PCB) components

Project Impact

1. Offering hands-on learning of satellite technology.
2. Progression of student based research projects.
3. Expanding educational horizons.
4. Future employment.
5. Increase recruitment and retention rates.

*Small Modules are the Future of Mobile Communications.