Team #3344

Activity 9.1: *LunaSat as a Transmitter*

Task 1: Radio Frequency (RF) Background

1. Briefly explain why RF is so important in systems
   It will allow us to locate LunaSat on the Moon and communicate with it.
   It is the only way to communicate wireless with LunaSat and receive data from it

2. What systems will the GLEE lunar data be sent through to get from the Moon to the Earth?

LunaSat is using PCB antenna which is tuned for 915 MHz
LunaSat uses semtech's Sx1272 as the transceiver IC

After transmitting data to Luna Lander the data will be send to Earth

Task 2: Transmitting LunaSat Set-UP

- ☑ ~~Retrieve an additional LunaSat, FTDI chip, and some jumper cables~~
- ☑ ~~Connect both LunaSats to FTDIs~~
- ☑ ~~Open the "**RF_Transmit_Text**" sketch and modify Team ID (line 7) and Message (line 10)~~
- ☑ ~~Plug Transmit LunaSat USB into the computer and select its port~~
- ☑ ~~With a sticky flag, label the LunaSat with a "T" for transmitter and the selected COM port~~
- ☑ ~~Compile and upload the code~~
- ☑ ~~Open serial monitor - Confirm display and that the LED is blinking Red~~

Task 3: Receiving LunaSat Set-Up

- ☑ ~~Unplug Transmit LunaSat~~
- ☑ ~~Open Lunasat "**RF_Receive**" sketch (**without closing transmit sketch**)~~
- ☑ ~~Connect Receive LunaSat to computer via another USB port~~
- ☑ ~~Modify Team ID (line 7). The Team ID in both the "**RF_Transmit_Text**" sketch and the "**RF_Receive**" sketch must match~~
- ☑ ~~Identify and select a ***different*** COM port to associate with the Receive LunaSat~~
- ☑ ~~With a sticky flag, label the LunaSat with a "R" for Receiver and the selected COM port~~
- ☑ ~~Compile and upload the code~~
- ☑ ~~Open serial monitor for Receive LunaSat~~

Task 4: Conduct the Experiment

- ☑ ~~Plug Transmit LunaSat into your laptop to power it~~

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- ☑ ~~Confirm Transmit LunaSat is blinking Red and Receive LunaSat is blinking Blue along with the Receive LunaSat's serial monitor~~

Describe what you are seeing on the serial monitor:
After few seconds we see a message
"

```
14:10:28.032 -> Waiting for Data
14:10:29.677 -> Receive Failed
14:10:29.677 -> Waiting for Data
14:10:31.847 -> Data received
14:10:31.882 -> Message: Hello team 3344 ! 44
14:10:31.917 -> Return Signal Strength Indicator: -132.00
```

"
This message was received over and over again