Steps to execute the project:

* On the transmitter PC, there is a LabVIEW VI which decodes a sound file, modulates it using Frequency Modulation with a 1 MHz carrier frequency and transmitter gain of 10dB.
* Connect the USRP to the local network via Ethernet cable.
* Connect the USRP to the bias tee using an SMA cable. The bias tee converts the bipolar signal generated by the USRP with a 2V DC bias which is provided by the voltage source such that the input to the LED driver is within the linear range of conversion.
* The bias tee gives output to the PCB which has ultra white colored LEDs and driver circuit containing MOSFETs. (Don’t forget to give power to Bias tee and the PCB)
* The receiver hardware is a photo-diode with a trans-impedance amplifier circuit which converts the optical signal back to analog. Use the ThorLabs PDA36A photodetector.
* On the receiver PC, the LabVIEW VI receives the analog signal and encodes it into a sound file which is played continuously.
* Switch on the LEDs and the photo detector.
* Run the transmitter side. Select the audio file you wish to transmit.
* If the connections are proper, on the receiver side you will get the audio signal back.