# Brandon Hogue

Research Notes

Senior Design 1 – ECEN4013

Team 2 – The Omega Blade

Team role – IR transmission, receiving, protocol, and programming

9/21/15

# References

[1]K. Curtis, High Power IR LED Driver Using the PIC16C781/782, 1st ed. Microchip, 2002, pp. 1-6.

Discusses modulation and protocol of IR transmission, as well as a method of driving an array of IR LEDs using a MOSFET driver.

[2]O. Liang, 'BJT vs MOSFET - OscarLiang.net', OscarLiang.net, 2013. [Online]. Available: http://blog.oscarliang.net/bjt-vs-mosfet/. [Accessed: 22- Sep- 2015].

Compares MOSFET devices and BJT devices in high-current driving with a microcontroller. Mentions that BJTs will consume more power because the MOSFET is a better switching devices, and the BJT has a voltage drop associated with the input pin.

[3]Data Formats for IR Remote Control, 2nd ed. Vishay, 2015, p. All.

Compares and explains various methods for modulation and transmission of IR communication.

[4]IR Receiver Modules for Remote Control Systems, 1st ed. Vishay, 2015, p. All.

Datasheet containing technical data and properties of the TSOP series of IR modules.

[5]Power MOSFET - ILD110, 4th ed. Vishay, 2012.

Datasheet containing technical data and properties of the ILD110-series logic level MOSFET driver.

[6]High Speed Infrared Emitting Diode, 940 nm, GaAlAs Double Hetero, 1st ed. Vishay, 2013, p. All.

Datasheet containing technical data and properties of the VSMB3940 High Speed 940nm IR LED.