

Flash-IOT

Weekly Team Meeting

02/27

27 Feb 2020 / 2:30 PM / VLSI LAB

ATTENDEES

Dr. Ay, Dr.Li, Xueren Wang, Wei Hu, Zhicai Li, Yanqin Huang, Yuhang Dai

AGENDA

- Showing our process in PWM modulation.
- Presenting BER testing process.

NOTES

- Showing process in PWM modulation.
 - In the meeting, we connected the Oscilloscope to both led side and photodiode side to test the Bit error rate. Even though the signal frequency of two side are almost same if ignoring very small difference like 4-5 μ s.

- Besides, we find out the real frequency of transmitted signal is high than the one we set in microcontroller. In oscilloscope, we detected the range of signal is between 320 to 370 μ s, and the frequency we set is 200 μ s.
- With respect to the light spectrum and PD sensitive, we need to find the effective point of both and add filter to reduce noise by ambient room light. It could reduce light intensity.
- Presenting BER testing process.
 - Xueen wang shows the PWM modulation we want to use in detect coming signal in the exact half timing period of one signal to figure out it. Because of signal we used in transmitting is 25% and 75%, detecting the 50% of it can have maximum tolerance. But we don't know how to do it.
 - After that, Dr.Ay thinks it is doable plan and explain it.
 - Plan A, by the hardware part, we can set a D-flip flop between coming signal and controller with timer. After that, using PLL to make coming signal is synchronized to clock in microcontroller.
 - Plan B, by the software part, which is comparative easier for us. In each tick, it can detect if there comes rising signal. If has, it can allow signal though it. After half period time counting by timer, the controller can detect it precisely. It may cost one or two tick to execute, but this error can be ignored.

ACTION ITEMS

- Improving codes by study how to use timer of Arduino.

- Find a better solution with timer to instead of original detecting method.
- Prepare for snapshot#3.