ECE 443 - Project #5

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1 Report

Below, in **Figure 1**, a waveform capture of a typical transmission is shown. The CAN1 module initiates the communication (see the ID ending in 04), and CAN2 responds (ID 01) afterwards. This cycle is repeated every second.

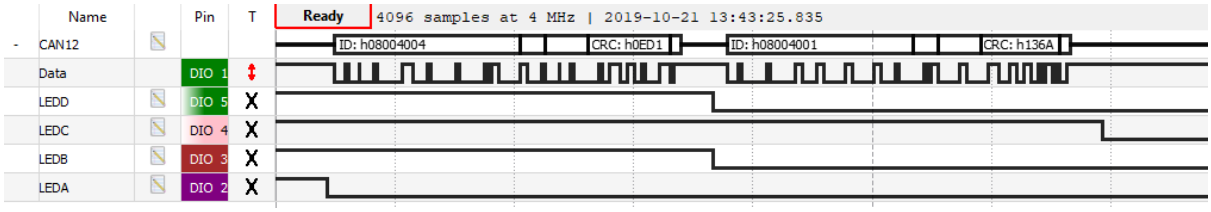

Figure 1: WaveForms capture of the CAN message and LED's

The one-way communication timings are obtained by looking at how long it took between LEDA and LEDD toggling. LEDA is set when a transmission begins, and LEDD is set to the state of LEDA when it receives the message. In my capture, I observed this as $323.5\mu s$.

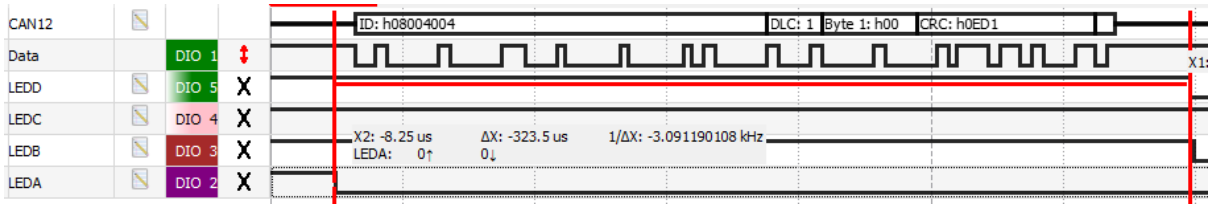

Figure 2: Timing of one-way communication over CAN

Finally, I measured the timings for two-way communication. This was indicated by the toggle of LEDA, and terminated by the same toggle of LEDC (which indicates the 2nd message has been sent and received). This took $651.3\mu s$, as shown in **Figure 3**. This is about what I expected, as a single transmission took almost exactly half this time.

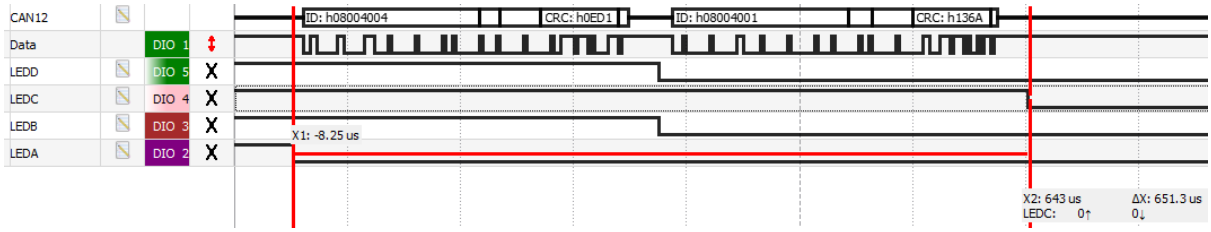

Figure 3: Timing of two-way communication over CAN