**Industrial Monitoring System Test Plan**

**Fiber Optic System**

* Test with a signal generator input, starting at a low data rate, and increasing until signal is no longer clear on the other end (also using varying duty cycles to simulate varying input)

**Manchester Encode/Decode**

* Test using a signal generator, checking and comparing input vs. output using scope (vary the duty cycle to check and confirm output still consistend)
* Add in fiber optic system in between encoder/decoder and confirm that the data stream is still visibly decoded on the other end

**Time Division Multiplexed Frames**

* Test sending directly from one Altera board to the other using an external clock
  + Test with various frame inputs and confirm they are still being received
  + Test injecting errors into the frame and confirming they are being recorded as errors on the receiving end
* Test transmitting frames through Manchester Encode/Decode and Fiber systems
  + Run using clocking from Manchester chips

**Sensor testing**

* Test ADC output using LED’s, with varying conversion rates
* Test receiving the ADC input in parallel onto the Altera board and confirm no errors
* Transmit TDM frames filled with correct sensor data over the whole network