

Senior Capstone Design

Project: **IoT Enabled Sensor Node with Optical Wireless Communicatio**

Team: **Flash-IoT**

Design Validation Plan & Results (DVP&R)

Requirement	Test	Test Subject
Nodes' size should not exceed 8cm*5cm*3cm	Measure the length, width and height	Fully functional prototype
OWC hub size should not exceed 15cm*10cm*5cm	Measure the length, width and height	Fully functional prototype
Demonstrate the difference in VLT between coated and uncoated panes of glass	Use a VLT meter to measure the amount of visible light that each pane is allowing through	Fully functional prototype
one single node should not exceed 5 lbs	Weight one node on a scale	Fully functional prototype
Transmit distance should more than 10 meters	Test the limit distance that OWC hub cannot receive the signal from nodes	Fully functional prototype
Transmit data rate should be more than 100Kb/s	transmit a certain amount of data and then measure the transmission time.	Fully functional prototype
Transmission data error rate should be less than 10^{-3} BER	Transmit a certain amount of data to the OWC hub and than check how many error data	Fully functional prototype

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