

ABSTRACT

Name : Nizar Abdul Mathin
Study Program : Electrical Engineering
Title : Analysis of Dielectric Characteristics of Transformer
Oil after Purification with Heating Activated Bentonite
Adsorbent

The growth of technology in the industrial domain is increasingly quick. This encourages PLC, a control device identical to the industrial world, to communicate with other devices, such as Arduino Portenta H7, a microcontroller device. This research aims to analyze data communication between the two devices via the Internet using the Modbus TCP protocol. In this research, Portenta H7 which performs as a client communicates with Omron CP1L-E as a server via the Internet using the Modbus TCP protocol. Data is sent with a variation of the request pause effect time to analyze its effect on communication performance. Quality of Service (QoS) measurements are carried out for 24 hours for each scenario. The results show that increasing the pause time affects communication performance. In the experiment with a 60 ms delay, bottleneck does not happen and the quality of service is in the good category based on TIPHON (Telecommunications and Internet Protocol Harmonization Over Networks) standard.

Keywords: *Modbus TCP, throughput, delay, jitter, packet loss*