

ABSTRACT

Rainfall greatly affect the performance of microwave transmission systems, especially the transmission system that works at high frequency as in satellite communications. The higher frequencies are used then the rain attenuation will be higher as well, thereby reducing the value of its availability. Therefore, tools graduated rainfall is needed to determine the amount of rainfall that occurs in an area that can assist in the calculation of the transmit power used in the transmission system.

At the end of the project has been designed a tool graduated with type tipping bucket rain gauge. In the gauge there is a funnel as the rainwater which is then channeled to the bucket which has two small shelters as rain that can terjangkau graduated alternately and in the middle of the two camps are magnets. When water filled the bucket one bucket will terjangkau segingga will fill up the bucket next to terjangkau, under the circumstances magnet at the center of the bucket will move back and forth so the past and activate reed switches located on the bottom of the funnel funnel. Reedswitch connected to the microcontroller which counts pulses that have been generated for a minute and then sent wirelessly using ZigBee communication which will then be displayed and stored on a computer database automatically.

The final project has produced a rain gauges are simple and can provide rainfall data results that can be directly processed so that it can help determine the rainfall.

Keywords: tipping bucket rain gage, reed switch, microcontroller, ZigBee..