Remote Water Consumption Metering using MQTT over Sub-gigahertz RF Environment

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Abstract

Most remote water metering systems use proprietary protocols and technologies that do not communicate with each other in a friendly way and this could be a problem for an enterprise with more than 4.3 million square meters and more than 750 measurement points. The use of equipment that is capable of collecting information and communicating with open protocols, based on IoT concepts, can be seen as a solution for such an undertaking. Thus, this article presents questions about the development of an integrated communication gateway with cloud service via MQTT protocol, for a water consumption measurement system in an enterprise using a low power microcontroller system with radio frequency data transmission operating in the sub-gigahertz band. The goal of using a radio frequency system is to maximize the coverage area per gateway installed while minimizing the costs of the equipment for widening the Wi-Fi network.

References
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Index Terms

Computer Science Circuits and Systems
Keywords

MQTT, cloud service, water metering system, sub-gigahertz radio frequency, IoT.