

A Comparative Study of Time and Energy Savings Due to Near Field Communication Technology

Shanta Mazumder

Faculty: Abu Asaduzzaman, PhD

Department of Electrical Engineering and Computer Science, College of Engineering

The popularity and demand for the Near Field Communication (NFC) applications are rapidly growing in the recent years. NFC technology helps transfer data by bringing two smart devices closer (5-10 cm). Many important applications, such as “contactless payment”, are supported by the NFC technology. Although NFC is vulnerable to numerous networking attacks including relay attack, NFC technology has many advantages (such as fast data sharing and passive communication) over other similar technologies including Bluetooth and Wi-Fi. In this work, we explore NFC, Bluetooth, and Wi-Fi technology by transferring different files. According to the preliminary experimental results, for 27 MB files, NFC technology helps reduce transfer time by 4.29% (i.e., more than 13 seconds) when compared with that due to Bluetooth technology. Moreover, NFC technology requires less energy (0.0555 watts) than the Bluetooth (0.111 watts). For a file size approximately 27 MB, NFC technology helps save 17.538 watt-second energy.