

## **Design and development of wireless communication transceiver to support RFID reader at UHF band**

### **Abstract**

This paper discusses the design and development of wireless transceiver to support communication between Radio Frequency Identification (RFID) reader and host computer. The transceiver is designed and developed to operate at Ultra High Frequency (UHF) band thus improving the present communication system between the reader and host computer. Presently, RFID reader communicates through wire with host computer. By using wire communication system, the reading and writing range from RFID reader to the transponder is limited, not portable and inconvenient to users. Besides, wire communication between RFID reader and host is not suitable for outdoor applications as farming, animal inventory and property tagging. The proposed wireless communication transceiver is operated at (UHF) band and uses digital amplitude shift keyed (ASK) modulation to modulate the RFID information. The wireless transceiver can fully support, without error, nearly up to 30 meters in line of sight (LOS) and non-line of sight (NLOS). The RF transmitter is connected to the RFID reader, and the RF receiver is connected to the host computer. The scanned RFID data can be read by more than one host computer in real time, thus it is suitable for indoor and outdoor applications, convenient and user friendly.