

Product Description

The PhidgetRFID Reader/Writer is a device used to read or write to RFID tags. Using an embedded PCB antenna, the 1024_0 radiates an electromagnetic field in order to read or write tags. When a tag is brought into the read range of the 1024_0, the tag is momentarily powered and re-broadcasts its tag identification number. The tag identification is read by the 1024_0 and made available to the user. The 1024_0 can also write to RFID tags by bringing the tag in close proximity to the device. There are many different tags available and the 1024_0 can read and/or write to tags that are: EM4102, ISO11784 and T5577.

Low Level Description

The functionality of the 1024_0 is attributed to a few key components. At the core of the PhidgetRFID Reader/Writer is a LPC1343, which acts as a USB interface to the device. This microcontroller is also used to control and communicate with the other major IC in the device, a RFID Application Specific Integrated Circuit (ASIC). Alongside, the LPC1343 is the 4097, a RFID ASIC, which is used to power the antenna. The two ICs communicate through a serial communications protocol in order to read and write to RFID tags. Data is simply provided by the LPC1343 and the 4097 handles transmission. Similarly, signals received are demodulated by the 4097 and is converted to data.

The 4097 RFID ASIC is a transceiver circuit that drives the antenna at the resonant frequency of 125 kHz. The driver circuit also modulates the RF field generated by the antenna for transmission and reception through AM modulation.