

Contactless smart card reader operation description

The Contactless smart card reader consists of one MCU, one 13.56M HZ contactless communication IC, one USB communication IC.

The function of each component is described as follows:

1. MCU (W78E516): running in 22.1184MHz main clock overall control for the system. Receive the control signal from the host (PC) via USB communication IC. Control the 13.56M contactless communication IC to communicate with a contactless card and receive the data from contactless card. Then it returns the received data to the host (PC) via USB communication IC.
2. 13.56M HZ contactless communication IC (NXP SL RC400): The IC receives the MCU control signal and send/receive the appropriate data to/from a contactless card (PICC).
3. USB communication IC (AU9720): Receive the signal from PC USB and transfer to UART signal to MCU, then receive the UART signal from MCU and transfer to USB signal on PC.

Operation Principle:

The Contactless smart card reader is powered by a USB connection, the power consumption is less than 200mA in working mode.

A typical transaction is as follow: The reader is waiting for the command via USB communication IC from host (PC). After receive, the MCU send command to initiate the 13.56 M HZ contactless communications IC. The IC receives the MCU control signal and send/receive the appropriate data to/from a 13.56M HZ contactless card (PICC). Then the IC sends the MCU the received data. The MCU send the received data to host (PC) via USB communication IC. Then the MCU change to waiting for the command via USB communication IC from host (PC).

The Contactless smart card reader is powered off by disconnect USB.