Contactless Reader CM1/TP - Operational Description

Contactless Reader CM1/TP is an example of implementation of ISO/IEC 14443A and ISO/IEC 14443B reader/writer and NFC reader/writer in desktop housing. PCB antenna, implemented on the same pcb with reader electronics, permits reading/writing on distance up to 60 mm (RFID card or other NFC device). USB serial cable permits communication withi computer. Also powering the reader is via same usb cable from the computer.

Main part of Contactless Reader CM1/TP is contactless reader IC CLRC663 in connection with the LPC1768 microcontroller. CLRC663 uses two power supply voltages - 3V3 V and 5 V. All other voltages are generated internally. CLRC663 IC use external quartz (27.12 MHz). All comunication lines (SPI, I2C) are connected to LPC1768 microcontroller. Complementary output stage (TX1, TX2) pins are used to generate output signal for the pcb antenna. Filter stage provide maximum adaption from output stage (CLRC663) to antenna (with matching capacitors). The filter is located near the IC CLRC663. The receiver inputs are connected to pins RXP and RXN.

LPC1768 microcontroller with embeded firmware permits reading/writing from/to contactless card or to communicate with the NFC device. On board DIP switches permit reader configuration setting. The default setting is reader in keyboard mode (no extra driver is needed). Communication from reader to personal computer is via usb serial cable.

Contactless readers is powered via USB cable – with 5V DC and typical comsumption 250mA.