PNEV5180B - Operational Description

Customer Development Board PNEV5180B is an example of implementation of ISO/IEC 14443A and ISO/IEC 14443B reader/writer, NFC reader/writer and Card Emulation Device on the same printed board. Middle size antenna, implemented on the same pcb (reader and antenna can be broken into separate parts), permits reading/writing on distance up to 50 mm (RFID card or other NFC device). The onboard USB connector permits direct connection and communication with personal computer.

Power supply is via usb port or via external power supply (7.5 V / 500 mA).

Customer Evaluation Board PNEV5180B is intended to send and receive data according to the ISO 14443A and ISO 14443B protocol. Data transfer from reader to/from contactless cards operates at frequency 13.56 MHz. Data transfer between PN5180 reader IC and microcontroller LPC1769 is via SPI serial communication.

LPC1769 microcontroller is connected to PN5180 Redaer IC via SPI serial communiaction port. JTAG connector is needed only to connect computer to write firmware into LPC1769 microcontroller. I2C interface on microcontroller is connected to EEPROM IC. SPI serial communication port on LPC1769 is used to communicate with PN5180 reader IC.

Main part of Customer Evaluation Board PNEV5180B is contactless reader IC PN5180. The PN5180 is a highly integrated high power output NFC frontend IC for contactless communication at 13,56 MHz. This frontend IC utilizes an outstanding modulation and demodulation concept completely integrated for different kinds of contactless communication methods and protocols at 13.56 MHz. Contactless Reader IC PN5180 use only one power supply voltage: 3V3 V DC via power supply IC (LT1129CST-3.3). All other voltages are generated internally. PN5180 IC use external quartz (27.12 MHz). SPI comunication is used to connect reader IC PN5180 to microcontroller. Complementary output stage (TX1, TX2) pins are used to generate output signal for antenna via filter stage and matching capacitors. Filter stage provide maximum adaption from output stage (PN5180) to antenna (with matching capacitors).

Disclaimer:

This module is intended only for development and evaluation purposes, and cannot be used in a finished product without further certification on the assembly.