

# PB-001

NFC Blocking Chip

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Functional Specification

V1.03

2019.8

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# 1. General description

The PB-001 is the new NFC blocking chip developed by ANQIDA Microelectronics for applications in protecting the NFC card chip from unauthorized access. (i.e. invalid detecting, reading, writing to the personal bank card, passports and others) .

The PB-001 product chip is designed to provide double protection to personal cards, that means it can not only adjust power of RF field but also generate high strength noise signals to interfere the communication between invalid reader and the personal security card.

## 1.1 Contactless energy and data transfer

Function to PB-001 can be established only when the IC is connected to an antenna. Form and specification of the antenna is out of scope of this document.

When PB-001 is positioned in the RF field, it will be stimulated immediately to generate the transmission of random data signals on the field with a high intense of signal magnitude and a baud rate of 106kbit/s, which can effectively block other normal communication of RF signal.

## 1.2 Simple deployment and user convenience

PB-001 offers specific features designed to improve integration and user convenience:

- The improved RF performance allows for more flexibility in the choice of shape, dimension and materials

## 1.6 Features

- Contactless transmission of data and supply (no battery needed)
- Operating frequency: 13.56MHz
- Fast communication baud rate: 106Kbit/s, 14443 Type A,B,C
- Contactless transmission of data and supply (no battery needed)
- Operating distance: up to 100mm (depending on antenna geometry)
- Automatically produce random signal after power up.

## 2. Product Overview

### 2.1 Introduction

PB-001 is RF signal generator Tag IC according to ISO14443 development by Shenzhen ANQIDA Smart Technology Co.LTD

PB-001 contains the RF-Interface and the Digital Control Unit. Energy and data are transferred via an antenna, which consists of a coil with a few turns directly connected to the RF1 and RF2 of the PB-001. No further external components are necessary.

### 2.2 Block Diagram

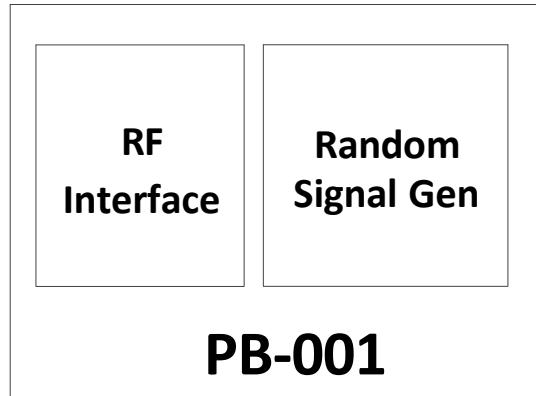


Figure 2 PB-001 Block Diagram

## 3.ELECTRICAL CHARACTERISTICS

SYMBOL	PARAMETER	MIN	TYP	MAX	UNIT
Cres	Input Capacitance between RF1-RF2	15	17	19	pF
tret	EEPROM Data Retention	10			Years
nwrite	EEPROM Write Endurance	100000			Cycles

## 4.OPERATING CONDITIONS

SYMBOL	PARAMETER	MIN	TYP	MAX	UNIT
Tjop	Operatin Junction Temperature	-25		85	°C
IRF1-RF2	Input current			30	mAms

## 5.ESD

SYMBOL		TEST CONDITIONS	RATING	UNIT
Tstg	Storage Temperature Range		-55 to 130	°C
Vesd	ESD Voltrage Immunity	MIL-STD-883C Human Body Model	±2	Kv

MIL Standard 883-C method 3015; Human body model: C = 100 pF, R = 1.5 k.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.