



# DE-BNP User Manual

## DUALi Inc.

Document Version: 1.0

Last Revised Date: 19 APR. 2013

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We have our development center in South Korea to provide technical support. For any technical assistance can contact our technical support team as below;

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## Revision History

- 2013.04.19 : First Release

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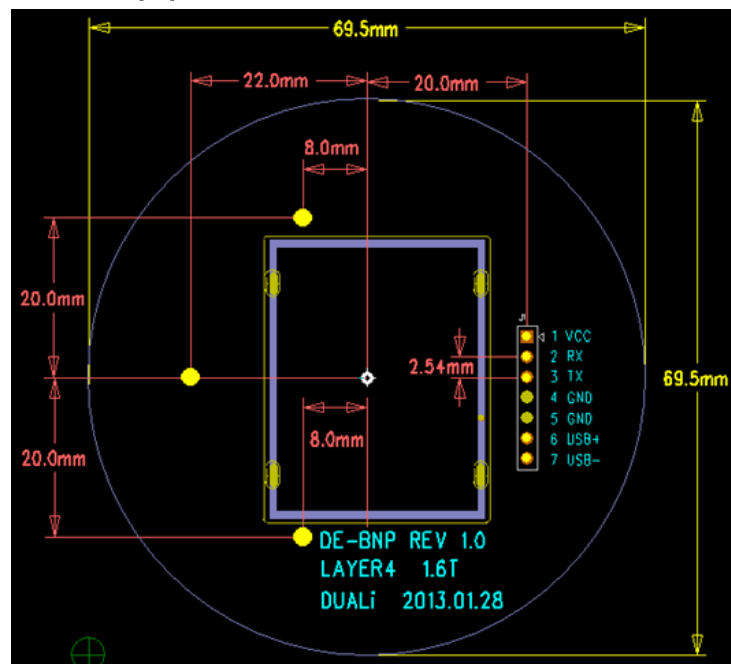
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## 1 Summary

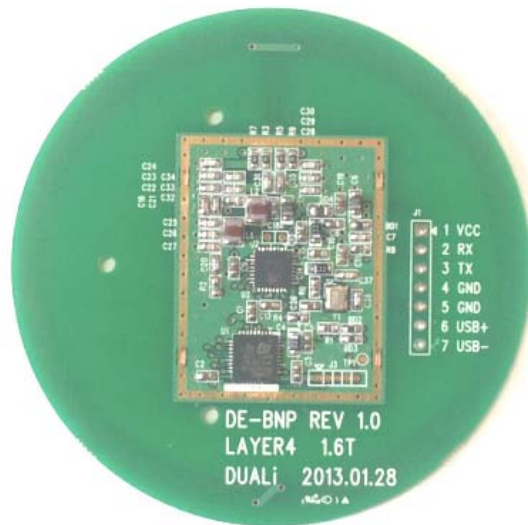
Smart Card Interface	Contactless Smart Card (ISO 14443 A/B), MIFARE, ISO15693, MB89R118, MB90R112
Host Interface	USB 2.0 Full Speed (12Mbps TTL-UART up to 115,200bps
Host Communication	Duali protocol
CPU	ARM 32-bit Cortex-M3(72MHz), 64Kbytes Flash, 20Kbytes SRAM
Power Voltage	DC5V
Current	MAX 150mA
Connection	7pin (2.5mm Pitch Hole)
Size	PCB : $\phi$ 69.5mm
Antenna Matching	Direct matching
Certification	TELEC, FCC, R&TTE, RoHS compliance
Operating Temperature	-20~80°C

## 2 Structure

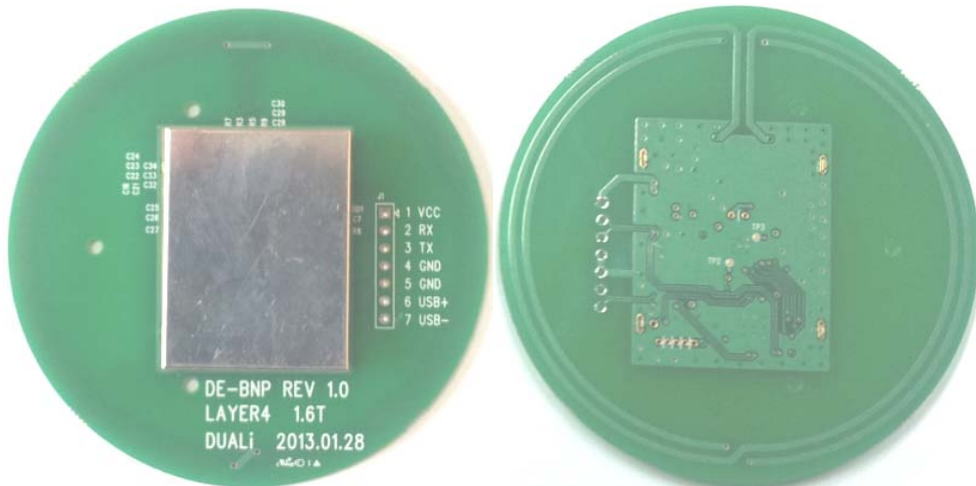
### 2.1 The Structure of equipment



## 2.2 Sample product



Metal case is not connect.



The Front

The Back

## 3 Connector pin assignment

### 3.1 HOST Interface

Pin	Signal	Description
1	VCC	DC5V vcc input
2	RXD	TTL-UART RxD (Input Port)
3	TXD	TTL-UART TxD (Open Drain)
4	GND	Ground
5	GND	Ground
6	USB+	USB PLUS
7	USB-	USB MINUS

CPU : 32bit RISC CPU, It is stm32f103 which is ARM-based 32-bit MCU with Flash, USB, CAN, seven 16-bit timers. This CPU has 64Kbyte Flash memory, 20Kbyte SRAM, 2 UART, USB 2.0 interface.

- SIC9310 RF IC : This Silicon Craft IC can control RF card like MIFARE card, type A/B card and 15693 card simultaneously.
- TTL-UART : It's a Communication part for TTL-UART communication.
- USB Connector : It's a Communication part for USB communication.

## 4 Description of electricity

### 4.1 The Description of power

- Input power : 5V (DC 5V)

### 4.2 The using electric current

- Normal 5V, 130 mA under
- MAX 5V, 150 mA under

### 4.3 The Description of USB communication

- USB V2.0

## 5 Property

### 5.1 Environment to use

- Temperature to use : -10 ~ 60 °C
- Humidity to use : 30 ~ 90 % (relative humidity)

### 5.2 Environment to keep

- Temperature to keep : -20 ~ 80 °C
- Humidity to use : 10 ~ 90 % (relative humidity)

## 6 Warning and Notice

- For indoor use only.
- This product is affected by an element like metal or Magnetism. So one has to take precautions.
- This device is not waterproof.



## **Warranty & Service**

▸ Warranty and Repair service

- DUALi Inc. warrants to the original consumer or other end user that this product, DE-BNP, is free from defects in materials and workmanship for a period of 1 year from the date of purchase.

※ **Note** Warranty/non-warranty repair fees do not include any shipping charges.

▸ The damages(defaults) prescribed below are NOT to be covered by warranty.

- User's misuse of part/component.
- Fault by the unqualified user's own intention of repairs.
- Product's inspection requirement.
- Adding certain functions or extension of system.
- Fault by User's misuse against the product's manual.

**\*Please contact our service team for the technical/ sales supports.**

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## 7 REGULATORY INFORMATION

### • **Compliance Statement**

*This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:*

*(1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.*

### . • **Caution**

*Any changes or modifications NOT explicitly APPROVED by DUALi could cause the DE-BNP module to cease to comply with FCC rules part 15 and thus void the user's authority to operate the equipment.*

### • **Information to User**

*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.*

### • **Antenna**

*This device shall only be used with the tested antenna that is integral PCB antenna.*

### • **Label and manual requirements for the End Product**

*For an end product using the DE-BNP there must be a label containing, at least, the following information. FCC ID certification number for model DE-BNP.*

*This device contains FCC ID : SWUDE-BNP*

*The label must be affixed on an exterior surface of the end product such that it will be visible upon inspection in compliance with the modular approval guidelines developed by the FCC*

*Where the DE-BNP will be installed in final products larger than 8cm x 10cm following statements has to be placed ONTO the device*

*. "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."*