

產品 規格/承認書

客戶：研華股份有限公司

客戶型號/品名：968DD00447

客戶料號：968DD00447

愛坦型號/品名： RYO710A / Multiprotocol 13.56MHz I2C Interface NFC/RFID

Antenna Module

愛坦科技股份有限公司

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|              |             |
|--------------|-------------|
| 原廠           | REYAX       |
| SPEC Version | V0.3        |
| Release Data | 29-JAN-2024 |

|     |     |
|-----|-----|
| 承辦  | 核可  |
| Ola | 張一明 |

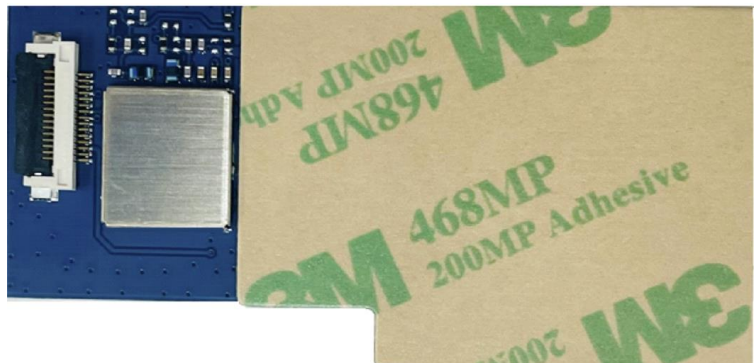
日期：1 月/13/2025



# RY0710A

## Multiprotocol 13.56MHz I2C Interface NFC/RFID Antenna Module

### Datasheet



## PRODUCT DESCRIPTION

The RYO710A (NXP PN7160A1HN/C100 ) module is a 13.56-MHz RFID. Built-in programming options make the device suitable for a wide range of applications for proximity and vicinity identification systems.

## FEATURES

RF protocols supported

- ISO/IEC 14443A, ISO/IEC 14443B PICC mode
- ISO/IEC 14443A, ISO/IEC 14443B PCD mode designed according to NFC Forum digital protocol T4Tplatform and ISO-DEP
- FeliCa PCD mode
- MIFARE PCD encryption mechanism (MIFARE 1K/4K)
- NFC Forum tags T1T, T2T, T3T, T4T and T5T
- NFCIP-1, NFCIP-2 protocol
- NFC Forum certification for P2P, reader and card mode
- ISO/IEC 15693/ICODE VCD mode
- NFC Forum-compliant embedded T4T for NDEF short record

\*詳細規格請依據 NXP PN7160A1HN/C100

## SPECIFICATION

| Item                        | Min.  | Typical | Max.  | Unit | Condition                                                        |
|-----------------------------|-------|---------|-------|------|------------------------------------------------------------------|
| Operation Voltage           | 2.5   | 3.3     | 5.5   | V    | VBAT                                                             |
| IBAT battery supply current |       |         | 290   | mA   | continuous total current consumption in PCD mode at VBAT = 3.6 V |
| Communication Range         |       | 3       |       | cm   | Standard card                                                    |
| RF Frequency Range          | 13.55 | 13.56   | 13.57 | MHz  |                                                                  |
| Storage temperature         | -25   | 25      | +85   | °C   |                                                                  |
| Operating Temperature       | -25   | 25      | +85   | °C   |                                                                  |
| Humidity                    |       |         | 90    | %    |                                                                  |
| Antenna                     |       |         |       |      | Internal PCB Antenna                                             |
| Weight                      |       | 4.1     |       | g    |                                                                  |

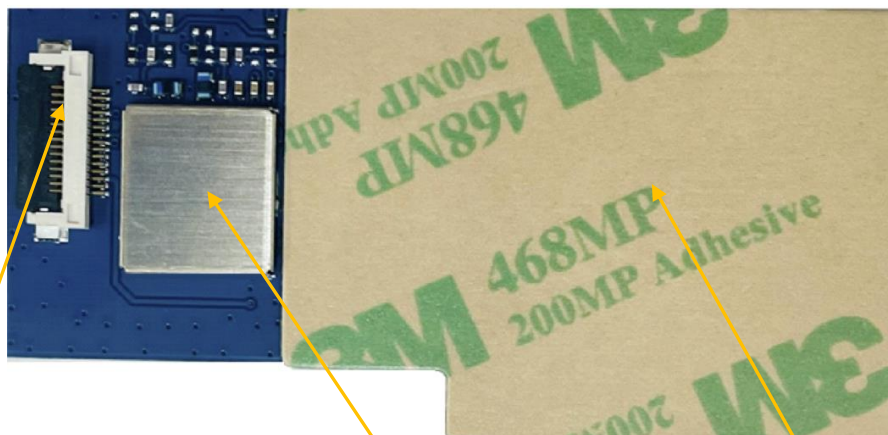
\*詳細規格請依據 NXP PN7160A1HN/C100

## PIN DESCRIPTION

| Pin | Name     | I/O | Condition                                                                           |
|-----|----------|-----|-------------------------------------------------------------------------------------|
| 1   | VBAT     | P   | Main power supply                                                                   |
| 2   | GND      | G   | Ground                                                                              |
| 3   | N.C.     | -   | Not Connected.                                                                      |
| 4   | VDD(UP)  | P   | Power Supply for RF Front-end<br>Connect to PN7160A1HN/C100 pin13                   |
| 5   | IRQ      | O   | Interrupt request from module to platform output<br>Connect to PN7160A1HN/C100 pin8 |
| 6   | N.C.     | -   | Not Connected.                                                                      |
| 7   | I2C_SDA  | I/O | I2C Data<br>Connect to PN7160A1HN/C100 pin5                                         |
| 8   | I2C_SCL  | I/O | I2C Clock<br>Connect to PN7160A1HN/C100 pin7                                        |
| 9   | GND      | G   | Ground                                                                              |
| 10  | VEN      | I   | Reset pin. Set the device in Hard Power Down.<br>Connect to PN7160A1HN/C100 pin10   |
| 11  | DWL_REQ  | I   | Firmware download control pin<br>Connect to PN7160A1HN/C100 pin2                    |
| 12  | N.C.     | -   | Not Connected.                                                                      |
| 13  | VBAT     | P   | Main power supply                                                                   |
| 14  | VDD(PAD) | P   | Pad supply voltage<br>Connect to PN7160A1HN/C100 pin6                               |
| 15  | GND      | G   | Ground                                                                              |

## DIMENSIONS

正面

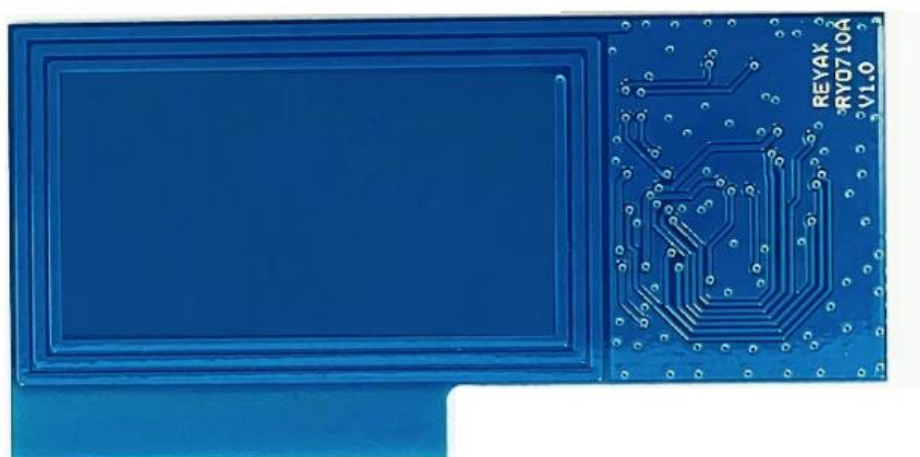


Connector **Pin1**  
宏致 51548-01541-001

防護金屬蓋  
高度 1.4mm

吸波材+背膠區域  
最高 0.5mm  
使用 3M 468MP 背膠

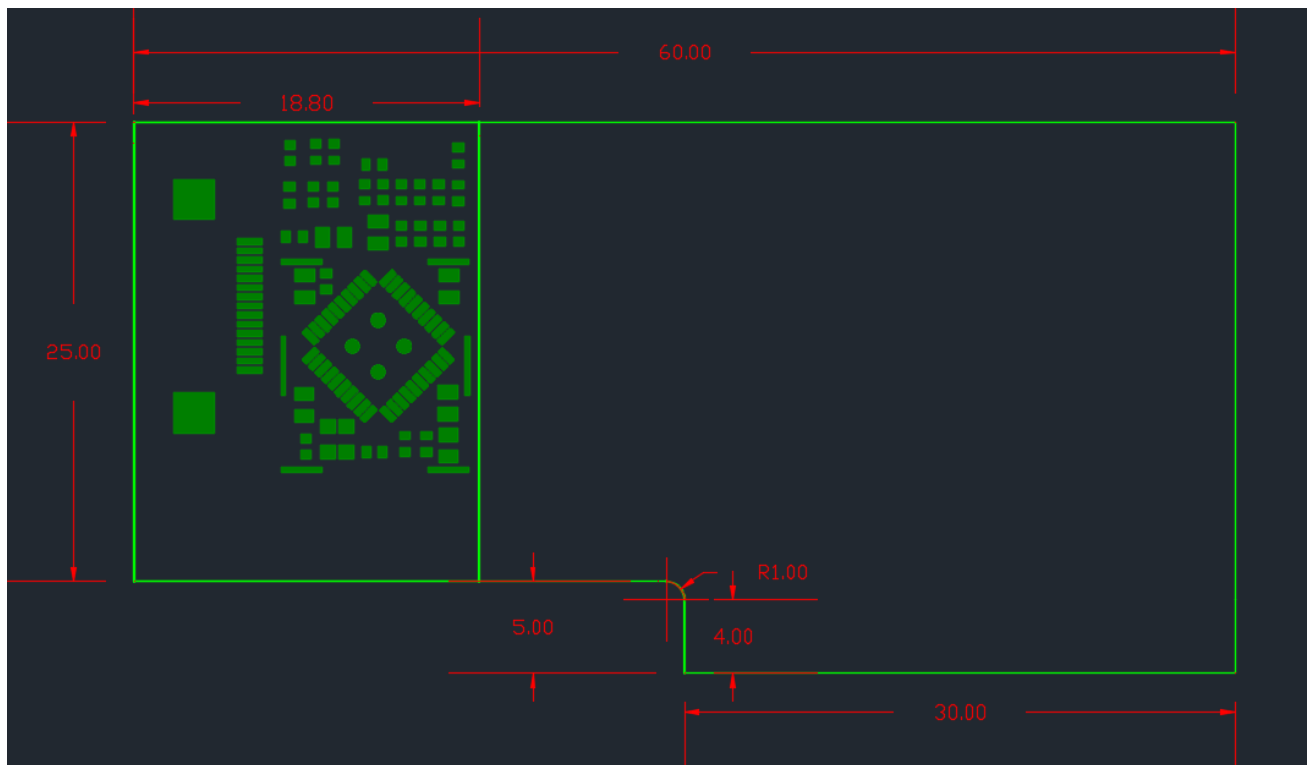
背面



PCB Thickness 0.8mm

unit : mm

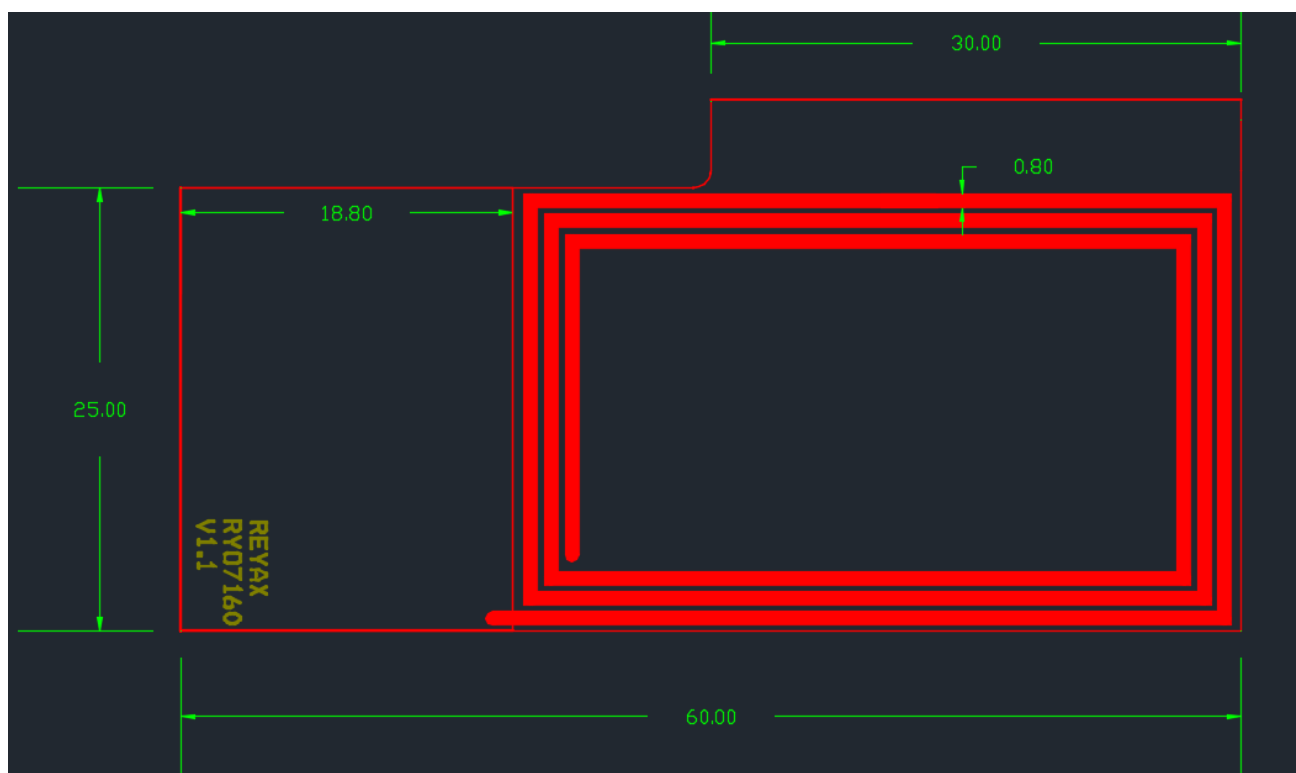
## DIMENSIONS 端子台與零件面



unit : mm

Tolerance:  $\pm 0.2\text{mm}$

## DIMENSIONS 天線面



此面高度=0

unit : mm

Tolerance:  $\pm 0.2\text{mm}$

**REYAX**  
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## REACH & ROHS DECLARATION

We, REYAX TECHNOLOGY CO., LTD hereby confirm that in case of the product(s) named RYO710A we always observe the prescriptions of REACH (1907/2006/EC) regulation and Restriction of Hazardous Substances (RoHS) Directive 2011/65/EU, as amended by EU 2015/863. The product(s) are fully compliant with the relevant regulation.

REACH compliance means that all substances contained in this product:

- has/have been pre-registered and/or has/have been registered by our company and/or our suppliers, and/or
- is/are excluded from the Regulation, and/or
- exempted from registration

Observance of the prescriptions are also demanded by us from our suppliers, and it is continuously checked.

The pertinence of the above mentioned information is continuously checked by us, if any change happens or new information comes up, our customers will be informed immediately.



.....  
(signature)

Manager of R&D

