

2.45GHz Active tag introduction

1. The Appearance



2. Introduction

This tag is a 2.4GHz active tags, matched with MR3001A reader, it can be written to data and read out data, it has 240 Bytes memory for users to store data. It uses two button lithium batteries to supply the source, and it has a long lifetime and change battery is easily. At normal status, the tag is in sleep mode to save battery, when MR3001A is working, it will wake up this tag, then the tag will send its ID to reader to finish the communication.

3. Applications and Features

- MR3820A active tag can be used in location system or personnel registry, and even conference attendance, etc.
- It should be matched with MR3001A reader to use in the real application
- Independent sending and receiving frequency, has a strong anti-interference ability
- The maximum identify range can reach more than 80m(depend on the antenna of reader and the tag's sending power), ultra-wide frequency band design
- Multi-tag identify at the same time (more than 50/s) while it can not be affected and limited by the amount of tag within the antenna's identify range.
- Large memory for users to store data

4. Specifications

Model name	MR3820A
Card shape	Card
ID type	4 byte ID
Working frequency	2.44GHz
Modulation	GFSK
Sending power	0dBm -6dBm -12dBm -18dBm(0dBm is the maximum and -18dBm is the minimum, the power can adjust the identify range) default is 0dBm
Sending time interval	0.25s, 0.5s, 1s, 2s, 4s (default is 1s)
EEPROM size	240 bytes storage capacity
Inductive mode	Auto-inductive
Identify range	3-80M
LED indication	When using the reader call a tag, the Led on tag will be twinkling

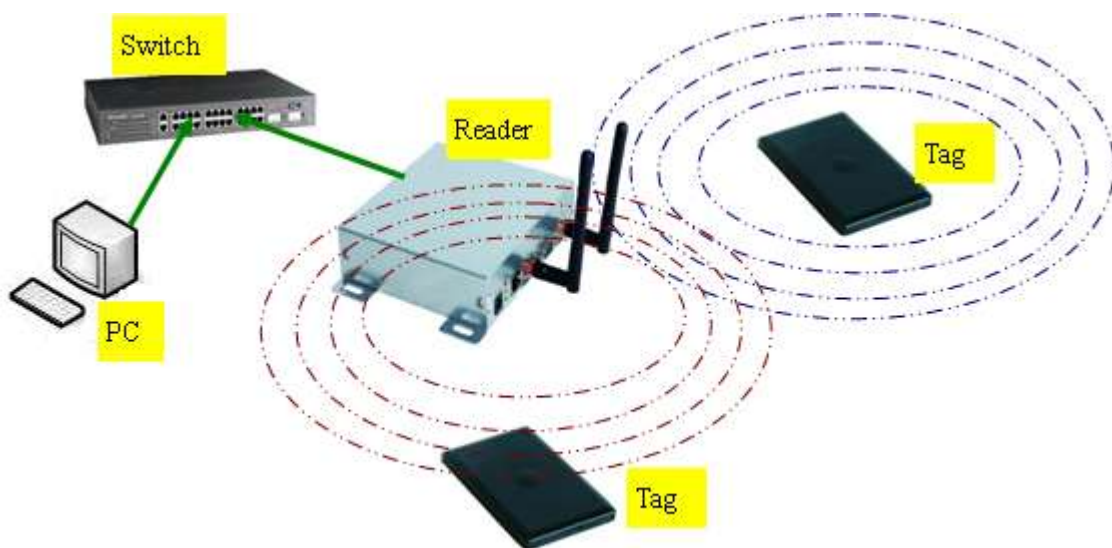
Material	PET, heat-resistance, water-proof
Dimension	87mm*55*mm5.5mm
Weight	20g
Battery	2 pcs 3.3V built-in button lithium
Use life	3 years

5 Tag memory

Address	Storage content
Addr0~3	store the tag's ID
Addr4~7	store the working parameters of tag
Addr4	store the interval time of tag automatically detect (automatically sending signal), 0x10, 0x11, 0x12, 0x13, 0x14 are separately related to 0.25s, 0.5s, 1s, 2s, 4s(sending time interval);the default is 1s
Addr5	the sending power of tag, 0x10, 0x11, 0x12, 0x13 are separately related to -18dBm,-12dBm,-6dBm,0dBm; the default is 0dBm.
Addr6	setting the tag's sending mode (passive or active, 0xAA is active, others values are for locating tag)
Addr7	reserved
Addr8~15	reserved
Addr16~255	user data

6. Usage of MR3820A tags

In real application, the system need MR3001A reader and MR3820A tags, and also a switch and PC is needed to exchange the data. See following picture, reader wake up the sleepy tags, and then tag will automatically send its ID and status information to reader. One tag will mark one person or goods. It can tell us the position of person or goods by the reading procedure. If the tag is stayed within the reader's reading range, it will be identified by the reader.



7. Use Demo software

2.45GDemo.exe is supplied to show the communication between reader and tags

The reader has com port and Ethernet port to connect with PC. The default sending time interval is 1s with the sending power is 0dBm.

Here we connect it with com port. Following show the result of identifying.

The screenshot displays the 2.45G_DEMO software interface. It is divided into several sections:

- Connection Options:** Includes 'Serial port' (selected) and 'Net port' options, with 'Connect' and 'Disconnect' buttons.
- Serial Ports:** Shows 'Com' set to 'COM5' and 'Baudrate' set to '115200' Bps.
- IP Install:** Fields for IP, Mask, Gateway, and Port.
- Reader Install:** 'Address' is set to '0' and 'Power' is '-18db'. Buttons for 'Search' and 'Set' are present.
- Tag Setting:** 'Tag' field is empty, 'Internal' is '0.25s', and 'Power' is '-18dBm'. Buttons for 'Search', 'Set', and 'Stop' are present.
- Operation Information:** A scrollable list of tag data entries, such as 'Tag:00 00 78 75 Loc:F3 Data:11 01 00 00'.
- Tag Information:** A table with columns for tag ID, data, and count. Buttons for 'Identity', 'Stop', and 'Clear' are located above the table.
- ReadWrite Tag:** A section for interacting with tags, including 'Tag' and 'Data' input fields, a 'Block' dropdown, and 'Call', 'Read', 'Write', and 'Stop' buttons.

Blue callout boxes highlight specific features:

- 'Write or read tag data' points to the ReadWrite Tag section.
- 'Start or stop tag identify' points to the Identity, Stop, and Clear buttons.
- 'Tag ID display' points to the Tag Information table.
- 'Tag records' points to the Operation Information list.

ID	Data	Count
3	00 00 78 CA	2
4	00 00 7A B6	4
5	00 00 67 EB	4
6	00 00 81 43	3
7	00 00 00 16	4
8	00 00 7A A7	1
9	00 00 7A 4D	2
10	00 00 68 22	1

FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT

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.

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.

CAUTION:

To assure continued FCC compliance:

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.