

Active RFID Tag & Reader Quick Start Guide

1. Introduction

This documentation addresses how to use the TAG and READER devices quickly. Basically, there are two roles on TAG or READER devices.

- Working as a tag device
- Working as a reader device.

The functionality of the tag device is to transmit the tag information to the reader device. The functionality of the reader device is to receive the tag information and send to other application. The tag devices and the reader device can form a star network for one-to-many application like wireless sensor network application, and a broadcasting network for many-to-many application such as active RFID application or hybrid topology.

Necessary configuration will be described on this document to use TAG or READER devices as a tag or reader device on different network topology.

2. Configuration environment

No matter TAG or READER devices are working as tag or reader devices, configuration can be made by UART interface and CLI commands are provided as well. Mounting READER to RS232 transmitting broad can use RS232 of PC to configure READER or any UART to RS232 device can be used too.

If TAG or READER devices work as tag devices, "Set On Air" can be performed from reader devices.

2.1 Configuration by UART

Generally, READER as a reader device can be mounted to RS232 transmitting broad. Any terminal software like PuTTY on PC can use CLI commands to configure the reader device through RS232 interface. Basic functionalities of CLI commands will be described on following chapters.

2.2 "Set On Air" to tag devices

"Set On Air" can be used on tag devices from reader devices without UART interface.

The procedure goes follows:

- Connect reader devices to PC by RS232 and change the reader to "Set On Air" mode by "JS 2" command.
- Press key 1 on tag device before power on the device.
- Power on the device. If the "Set On Air" is successful, the LED1 will be blink and release the key 1.
- The CLI command of the tag device will be displayed on reader device. All CLI commands of the tag device can be performed on reader screen.
- "+++" commands can be performed to disconnect the tag and reader devices.

3. Basic Configuration

“Channel Number”, “Channel Power”, “Report Period”, “Battery Report Period” and “ID” are five basic configurations to be considered on tag and reader devices.

3.1 Channel Number

Channel Number is used to configure the channel frequency. The channel frequency of the tag or reader devices must be the same.

3.2 Channel Power

Channel Power is used to configure the power of the RF channel. Higher channel power can be provided higher distance.

3.3 Report Period

The report period is used to configure the report interval from tag to reader devices. If report period is zero, the tag will not report information to the reader.

3.4 Battery Report Period

The battery report period is used to configure the report interval of the battery status. The battery report period should be greater or equal than report period.

3.5 ID

Customized ID can be used to identify the tag devices. 8bytes ASCII Character can be used.

4. Broadcast Topology

After basic configuration is done, the tag devices will start to transmit the tag information to the reader device by broadcast if channel number is the same and the report period is greater than zero without other configurations.

5. Star Topology

To form a star topology, the tag devices need to “Join” the reader device. The procedure to join the reader device goes follows:

- Connect reader devices to PC by RS232 and change the reader to “Join” mode by “JS 1” command.
- Press key 1 on tag device before power on the device.
- After power on the tag device, the “Join” will start automatically.
- If the join is successful, the LED1 will be blink and release the key 1.