

# LoRa Tag User Manual

Product Name: LoRa Tag Model No.: WP-SG-TAG-01



Version: 1.0

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Description	Lora Tag User Manual				

### **Amendment Records**

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Universal Global Scientific Industrial Co., Ltd.		Doc No.		Rev	1.0
Document release by WSS2/WP1/SW		Date.	2018/12/04	Page	3
Description	Lora Tag User Manual				

## Contents

Contents	3
1. Tag Unit Overview	4
2. How to use the Tag	5
3. Operation Frequency	6
4. Operation Mode	7
4.1 POWER UP Mode	7
4.2 STORAGE Mode	
4.3 UNBOX Mode	
4.4 EVENT Mode	
4.5 STATUS Mode	

Universal Global Scientific Industrial Co., Ltd.		Doc No.		Rev	1.0
Document release by WSS2/WP1/SW		Date.	2018/12/04	Page	4
Description	LoRa Tag User Manual				

# 1. Tag Unit Overview



- 1. Antenna
- 2. 2D code with serial number
- 3. S1 Trace
- 4. S2 Pads
- 5. Imprint Battery
- 6. PWR+ Pad (+3.3V)
- 7. PWR- Pad (GND)

Universal Global Scientific Industrial Co., Ltd.		Doc No.		Rev	1.0
Document release by WSS2/WP1/SW		Date.	2018/12/04	Page	5
Description	LoRa Tag User Manual				

# 2. How to use the Tag

Scan the 2D barcode using mobile phone at first and a web page will pop up, then peel off the label from the poster, you may get a coupon from the web page



Peel off the label on Lora tag then start to transmit signal to mobile phone to get a coupon or prize

Universal Global Scientific Industrial Co., Ltd.		Doc No.		Rev	1.0
Document release by WSS2/WP1/SW		Date.	2018/12/04	Page	6
Description	LoRa Tag User Manual				

# **3. Operation Frequency**

There are 64 channels for tag use, and the channel/frequency are showed as below table and the bandwidth on each frequency is 125KHz.

Channel	Freq. (MHz)						
0	902.3	16	905.5	32	908.7	48	911.9
1	902.5	17	905.7	33	908.9	49	912.1
2	902.7	18	905.9	34	909.1	50	912.3
3	902.9	19	906.1	35	909.3	51	912.5
4	903.1	20	906.3	36	909.5	52	912.7
5	903.3	21	906.5	37	909.7	53	912.9
6	903.5	22	906.7	38	909.9	54	913.1
7	903.7	23	906.9	39	910.1	55	913.3
8	903.9	24	907.1	40	910.3	56	913.5
9	904.1	25	907.3	41	910.5	57	913.7
10	904.3	26	907.5	42	910.7	58	913.9
11	904.5	27	907.7	43	910.9	59	914.1
12	904.7	28	907.9	44	911.1	60	914.3
13	904.9	29	908.1	45	911.3	61	914.5
14	905.1	30	908.3	46	911.5	62	914.7
15	905.3	31	908.5	47	911.7	63	914.9

64 Channels are provided for Hopping Mode (125kHz Bandwidth):

Universal Global Scientific Industrial Co., Ltd.		Doc No.		Rev	1.0
Document release by WSS2/WP1/SW		Date.	2018/12/04	Page	7
Description	LoRa Tag User Manual				

## 4. Operation Mode

There are 5 operation modes below in the tag life cycle.



### 4.1 POWER UP Mode

Started when power on, and will stopped after 5 ALIVE packets sent.

### Packet Duty Cycle:

1 packet per 5 seconds

#### Packet Example:

"datr":"SF7BW125","addr":44012345, "port":59,"data":02000001B318

#### **Payload Format:**

Port: **59** BYTE 1 (bit7:0): Major Version BYTE 2 (bit7:0): Minor Version BYTE 3 (bit7:0): Patch Version BYTE 4 (bit7:4): S2 State, 0: Low Level, 1: High Level (Triggered) BYTE 4 (bit3:0): S1 State, 0: Low Level, 1: High Level (Triggered) BYTE 5 (bit7:0): VCC voltage (+150 = Real VCC Voltage) BYTE 6 (bit7:0): Temperature

Universal Global Scientific Industrial Co., Ltd.		Doc No.		Rev	1.0
Document release by WSS2/WP1/SW		Date.	2018/12/04	Page	8
Description	LoRa Tag User Manual				

## 4.2 STORAGE Mode

Started after 5 ALIVE packets sent in power up mode, and will stop when S1 or S2 be triggered. No any TX & RX in the storage mode.

### 4.3 UNBOX Mode

Started when S1 be triggered and will move to EVENT mode after 1 hour.

Packet Duty Cycle: 1 packet per 20 seconds in the initial hour

Packet Example: "datr":"SF7BW125",addr":44012345, "port":60,"data":B318

Payload format: Port: 60 BYTE 1 (bit7:0): VCC voltage (+150 = Real VCC Voltage) BYTE 2 (bit7:0): Temperature

## 4.4 EVENT Mode

Started at the end of UNBOX mode until S2 be triggered.

Packet Duty Cycle:

1 packet per hour

Packet Example: "datr":"SF7BW125",addr":44012345, "port":60,"data":B318

### Payload format:

Port: **60** BYTE 1 (bit7:0): VCC voltage (+150 = Real VCC Voltage) BYTE 2 (bit7:0): Temperature

Universal Global Scientific Industrial Co., Ltd.		Doc No.		Rev	1.0
Document release by WSS2/WP1/SW		Date.	2018/12/04	Page	9
Description	LoRa Tag User Manual				

## 4.5 STATUS Mode

Started when S2 be triggered until no battery.

#### Packet Duty Cycle:

1 packet per 1 minute

### Packet Example:

"datr":"SF7BW125",addr":44012345, "port": 61,"data": 0000000B318

#### Payload format:

Port: **61** BYTE 1 (bit7:0): bit 31:24 of Frame Count BYTE 2 (bit7:0): bit 23:24 of Frame Count BYTE 3 (bit7:0): bit 15:8 of Frame Count BYTE 4 (bit7:0): bit 7:0 of Frame Count BYTE 5 (bit7:0):VCC voltage (+150 = Real VCC Voltage) BYTE 6 (bit7:0): Temperature



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#### **Federal Communication Commission Interference 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 harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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 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.

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

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

#### **Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 5mm between the radiator & your body.