

Operation Manual  
WWDLWU& WWDULU

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## 1. Product Detail

- Main Chip: STM32L083
- RF Chip: SX1261
- GSensor: LIS3DH with built-in Temperature Sensor
- Leak Sensor: Dual Water Leak Sensor Probe
- Buzzer

## 2. RF Regulation (Do we need to configure sub-band and frequency?)

### 2.1. Modulation:

- (G)FSK

### 2.2. US frequency bank(Sub-bank Set? Production PLC Setting)

- 64 Channels uplink from 902.3MHz – 914.9MHz @ 125K
- 8 Channels uplink from 903.0MHz – 914.2 MHz @ 500K
- 8 Channels downlink from 923.3MHz – 927.5MHz @ 500K

### 2.3. EU Frequency Bank (Sub-bank Set? Production PLC Setting)

- Channel Uplink?
- Channel Downlink?

## 3. Power Supply

### 3.1. Battery ER14250 3.6V 1200mA

## 4. Features

## 5. Key & LED Operation “UI” (Others UI, please refer Z-Wave UI Definition. Eg. Timeout, Fail, Power OK..)

### 5.1. BVS Working Mode

#### 5.1.1. Shipping mode

- 5.1.1.1. By default, before ship out, the Shipping mode is enabled to let Lipstick goes into lower power consumption during transportation.
- 5.1.1.2. To disable Shipping mode before installation.
  - Trigger and hold Water Leak Sensor for 10 Seconds
  - LED keeps blinking.
  - Buzzer Sound ON 1 second.

#### 5.1.2. Standalone mode

- Yellow LED blinking (Heartbeat, refer to Z-Wave UI)

#### 5.1.3. Network mode

- Green LED blinking (Added into Simple Ubilink network with fair RF signal)
- Red LED blinking (Added into Simple Ubilink network with poor RF signal)

### 5.2. Inclusion/ Exclusion (Active low RF power mode during Inclusion/Exclusion, only accept RF range within 1-1.5 meters)

#### 5.2.1. ManualInclusion Mode

##### 5.2.1.1. Procedure& UI

- Trigger and wakeup Lipstick
- Place and hold Lipstick in Vertical position.
- Waiting Ready UI
- Keep Lipstick in Vertical and Shake it in Horizontal “Left ← → Right”
- (Green LED and Buzzer) Turn ON 1 second.
- UI will change to Network Mode status

#### 5.2.2. ManualExclusion Mode

##### 5.2.2.1. Procedure& UI

- Trigger and wakeup Lipstick
- Place and hold Lipstick in Vertical position.
- Waiting Ready UI
- Keep Lipstick in Vertical and Shake it in Horizontal level “Left ← → Right”
- (Green LED and Buzzer) Turn ON 1 second.
- UI will change to Standalone Mode status.

### 5.3. Heartbeat Frame

#### 5.3.1. Heartbeat function

- Sends Battery Report to BVS every 24 hours,
- Heartbeat tells BVS it's still alive.

### 5.4. Water Leak Alarm&Cancellation

#### 5.4.1. Water Leak Alarm. (Sends out to BVS)

- Trigger Local Water Leak Sensor Probe
- Or Trigger Remote Water Leak Sensor Probe.
- Sends out Alarm Frame to BVS
- UI – Battery above 50% (Red LED & Buzzer sound 1Hz)

- UI – Battery below 50% (Red LED 1Hz and no Buzzer sound)
- 5.4.2. Water Leak Cancellation.**
  - No more Water Leak triggered Leak Sensor Probe.
  - Stop to send out Water Leak Alarm
  - UI – No LED and Buzzer
- 5.4.3. Only allowed OPEN / CLOSE operation once Alarm is cancelled.**
- 5.4.4. Key action**
  - Long hold 2 seconds. (Refer to Z-Wave UI for buzzer & LEDs)
- 5.5. Low Battery Level Status Warning**
  - 5.5.1. Sends out Low Battery Status Warning to BVS**
    - At or lower 30% sends out Low Battery Warning Frame by using Heartbeat to BVS
    - (Yellow LED + Buzzer Sound at 1Hz for 3 seconds) hourly
- 5.6. Device Connecting Error & Cancellation (Each 24 hours Lipstick sends out heartbeat to BVS)**
  - 5.6.1. Device Connection Error Warning**
    - When Lipstick Sends Heartbeat to BVS if
    - LED: (Yellow LED + Red LED)
    - (Buzzer sound x 9) Every hour
  - 5.6.2. Device Connection Warning Cancellation Key event**
    - Short click Touch Key 2 times + Event okay. (During Device Connection Error Warning)
- 5.7. Send Alive Packet to BVS**
  - 5.7.1. Lipstick uses heartbeat to tell BVS it's still connecting with UBiLink Network**
    - Sends out heartbeat with Battery Status Report
    - If Battery Level is lower 30%, then go to Low Battery Level Status Warning (5.5)
- 5.8. Factory Reset**
  - 5.8.1. Key action and procedure, Buzzer & LED**
    - Wake-up the Lipstick by using GSensor,
    - Place it in Horizontal,
    - Waiting for Ready signal,
    - Keep Lipstick in Horizontal position and Shake it in Horizontal level "Left ↔ Right"
    - After movement action is confirmed by UI,
    - Trigger Water Leak Sensor Probe,
    - Soft reset the Lipstick,
    - Play Power OK UI.

## 6. FCC 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.

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 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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

#### Radiation Exposure Statement

This device complies with RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.