

# WS900

## Diaper Wetness Sensor for Home Care

### User's Manual

FCC ID: OWGWS900TX & OWGWS900RX

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.

Any changes or modifications not expressly approved by Excel Engineering (HK) Co. Ltd. could void the user's authority to operate the equipment.

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 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.

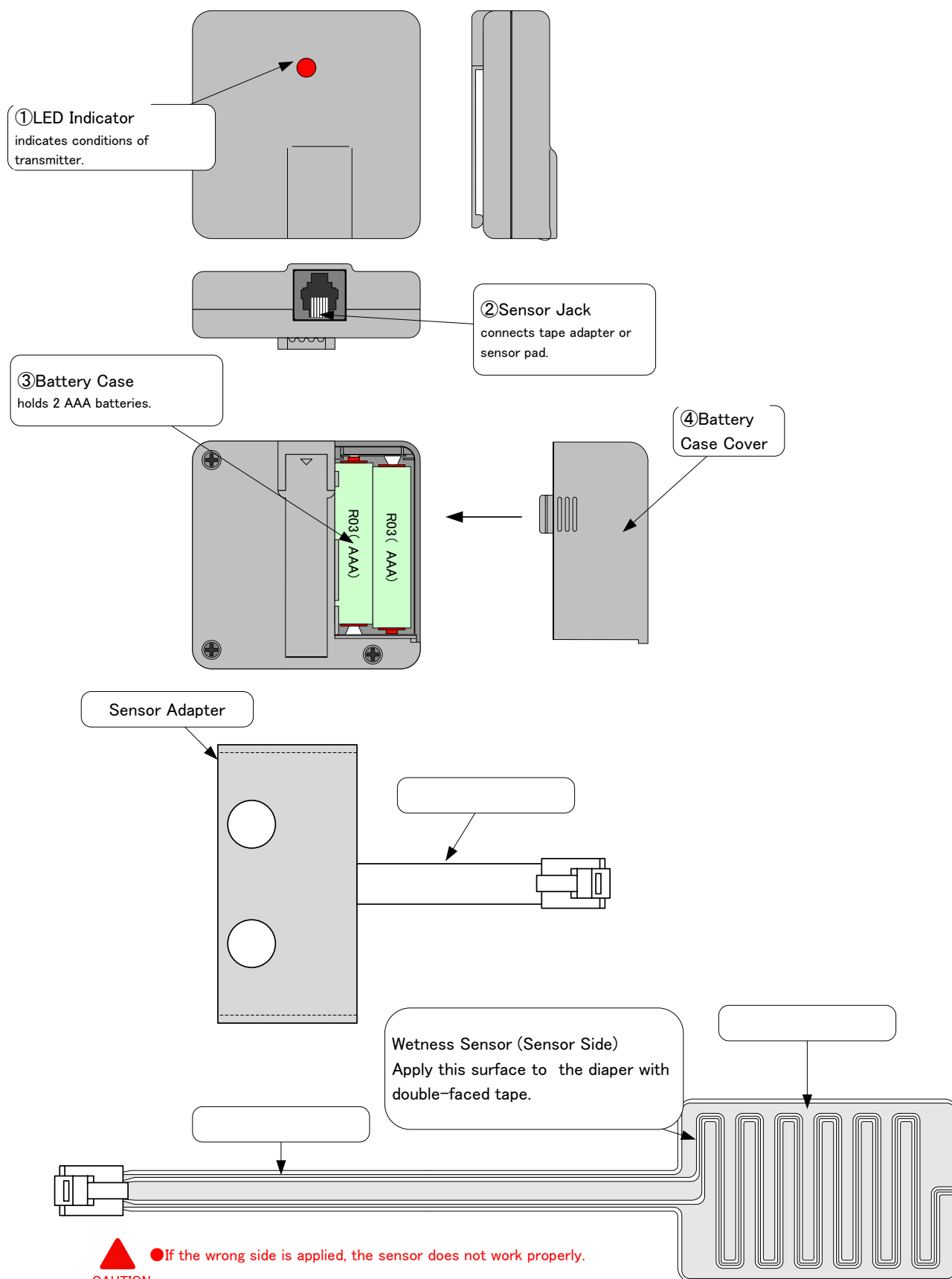
## 1. Specification

| Item                            | Spec.                                                                    | Comment                        |
|---------------------------------|--------------------------------------------------------------------------|--------------------------------|
| Frequency                       | 907.762MHz                                                               |                                |
| Current                         | Within FCC Requirement (Less Than 5000uV/m)<br>Range In-Door Approx. 50m | FCC Automatic Levels 15.231(e) |
| Frequency Capacity<br>Deviation | ±10ppm                                                                   |                                |
| Oscillation Type                | Crystal Oscillator                                                       |                                |
| Modulation Type                 | FM Band                                                                  |                                |
| Modulation Speed                | 500bps                                                                   |                                |
| Wetness Sensing                 | Volume Sensor, Resistance Sensor                                         |                                |
| Sensor Connection               | 6-Line Modular                                                           |                                |
| LED Indicator                   | Operation Indicator, Battery Indicator                                   |                                |
| Operating Temp.                 | 0~45°C                                                                   |                                |
| Power Supply                    | 3V (AAA x 2)                                                             |                                |
| Battery Life                    | Approx. 1 Month                                                          |                                |
| Antenna                         | Built-In                                                                 |                                |
| Case                            | ABS                                                                      |                                |

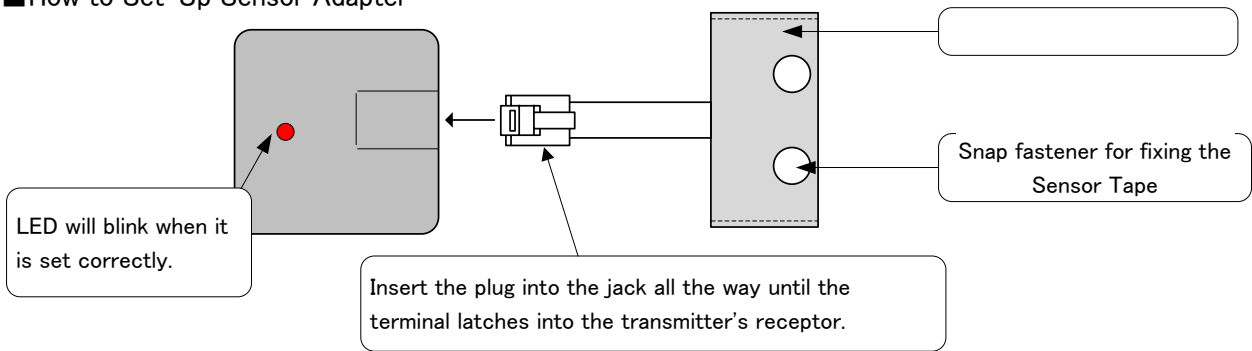
## 2. Function

|               |           |                                                                                                                                                                       |
|---------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Max ID        | -----     | 256                                                                                                                                                                   |
| ID Set-up     | Type      | Fixed                                                                                                                                                                 |
|               | Method    | Written in ROM                                                                                                                                                        |
| Sensor Set-up | Type      | Auto                                                                                                                                                                  |
|               | Method    | Switch Sensor Pad & Tape Adapter                                                                                                                                      |
| LED Indicator | Type      | LED                                                                                                                                                                   |
|               | Condition | Wet Mode---Blink at 3 sec. cycle<br>Operating---Automatically illuminates after installing<br>sensor and blink at 6 sec. cycle<br>Low Battery---Blink at 1 sec. cycle |

## ■Parts Description & Function



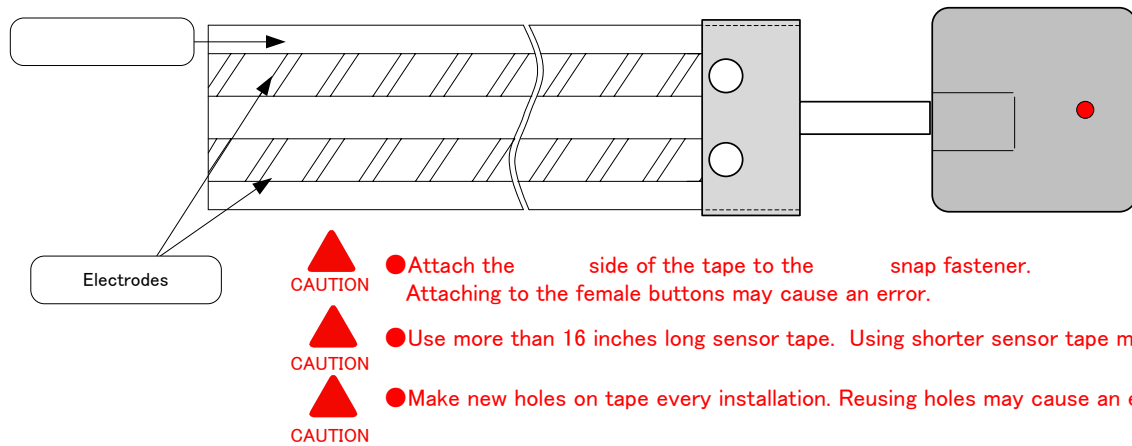
## ■How to Set-Up Sensor Adapter



## ■How to Set-Up Sensor Tape

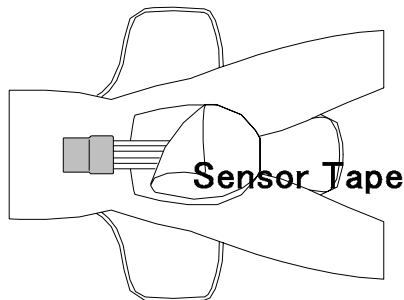
Install the sensor adapter to the sensor tape as below.

Please make sure that the snap fasteners touch the electrodes; otherwise, it may not sense wetness.



## ■How to Apply to Diaper

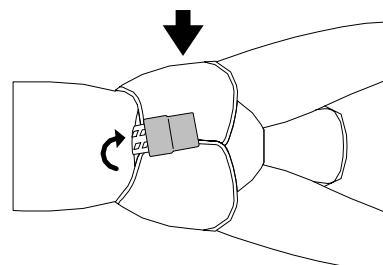
### •Using Sensor Tape



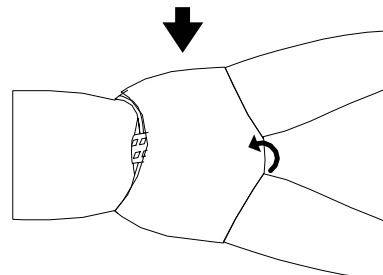
1. Apply the sensor tape between two layers of cloth diaper.

注意 Face the blue side of the sensor tape to skin. Facing the wrong side may cause an error.

注意 The sensor tape is only for one time use. Discard the used tape as combustible.

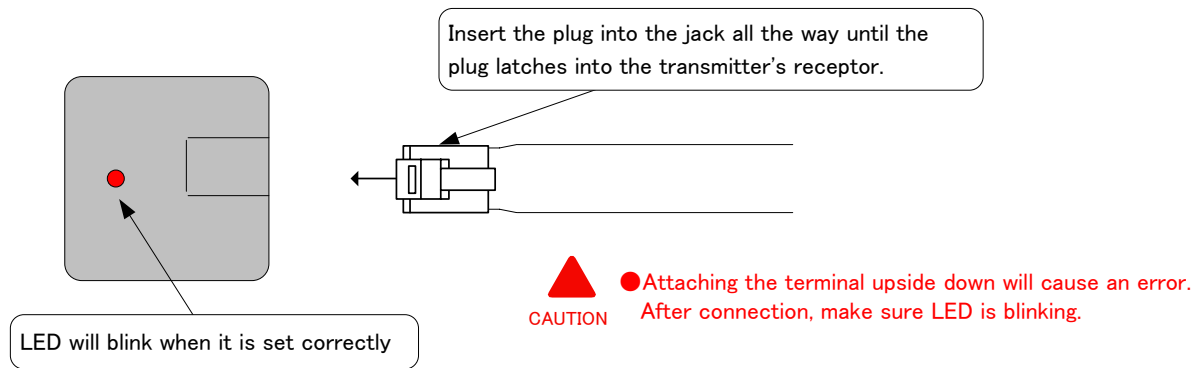


2. Wrap the diaper with its side cover and fasten with Velcro fastener. Fold back the transmitter on the cover.

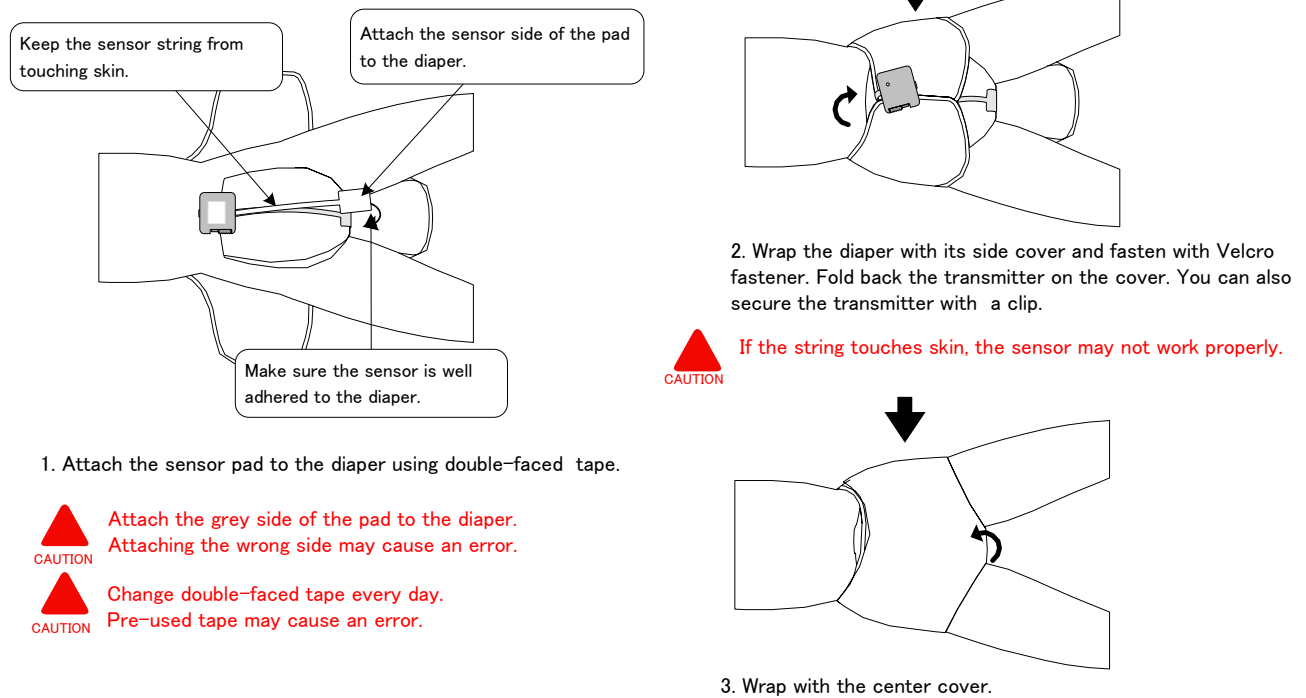


3. Wrap with the center cover.

## ■How to Set-Up Sensor Pad

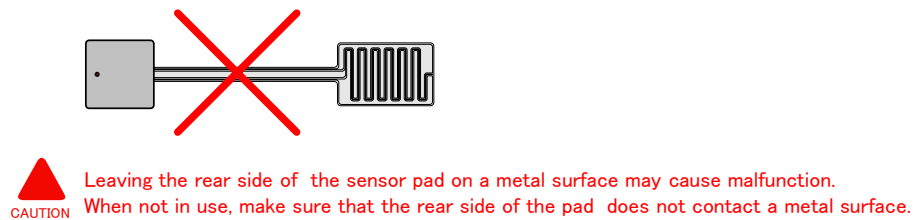


## ■How to Apply to the Diaper



## ■Storage Caution

- When storing, detach the sensor pad from the transmitter, or remove batteries.



## 1. Specification

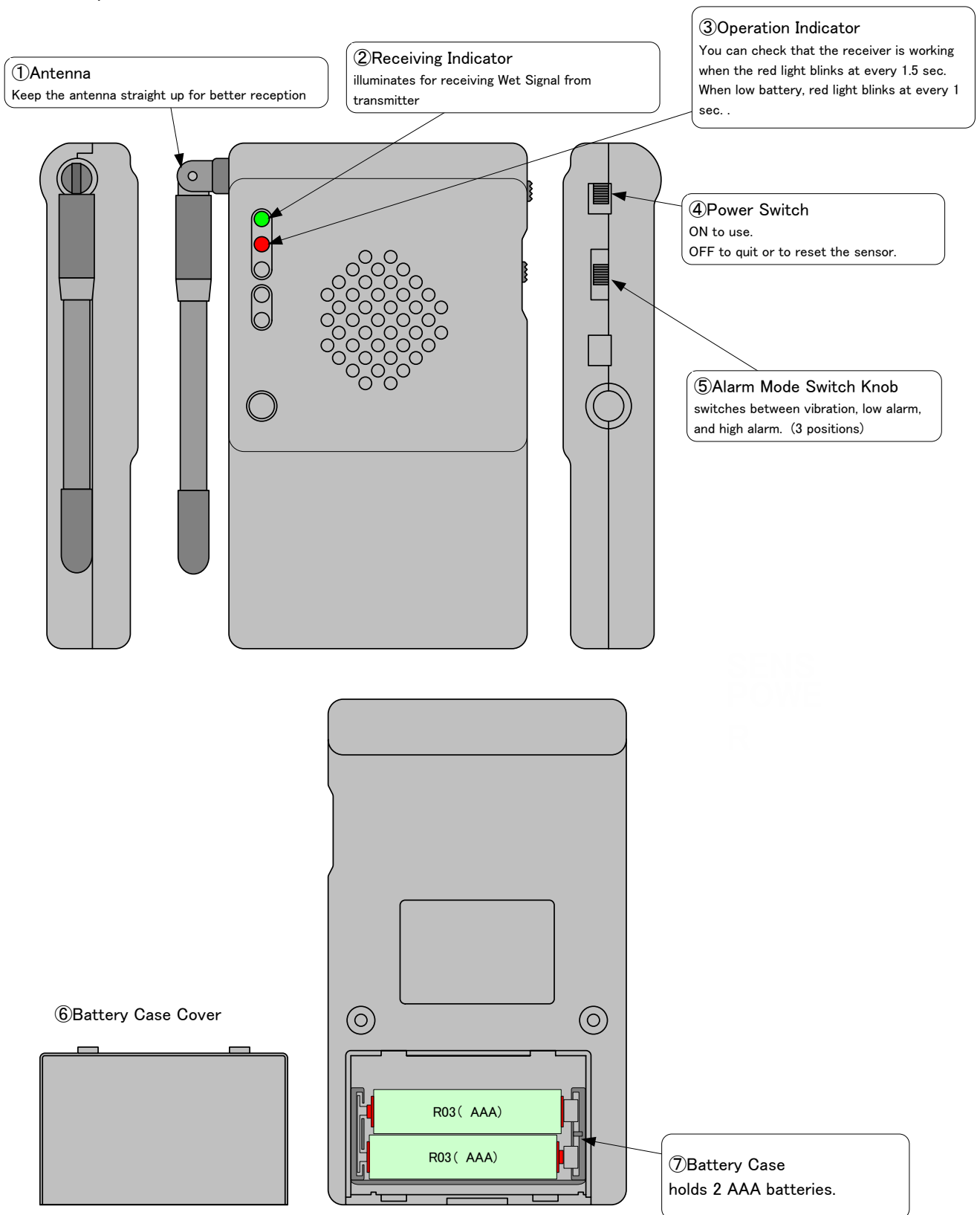
| Item                | Spec.                                    | Comment                    |
|---------------------|------------------------------------------|----------------------------|
| Receiving Frequency | 907.762MHz                               |                            |
| Sensitivity         | Indoor Approx. 50m<br>100dBu(12dBSINAD)  |                            |
| Receiving Type      | FM Band                                  |                            |
| Unwanted Emission   | Within FCC                               |                            |
| ID Channel          | Select 1 of 256                          | Written in ROM             |
| LED Indicator       | Operation Indicator, Receiving Indicator |                            |
| Alarm               | Switch Hi-Low (Volume Hi—Low)            |                            |
| Vibrator            | Intermittent Vibration                   |                            |
| Operating Temp.     | 0~45°C                                   |                            |
| Power Supply        | 3V (AAA × 2)                             | Alkaline AAA Battery x 2   |
| Battery Life        | Approx. 1 Month                          |                            |
| Antenna             | 1/2 λ (External)                         | Can swivel                 |
| Case                | ABS<br>L100 × W59 × H19.5                | Modified the existing case |

【Receiver

## 2. Function

|                                 |           |                                                                                                                                        |
|---------------------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------|
| Max D                           | -----     | 256                                                                                                                                    |
| ID Set-up                       | Type      | Fixed                                                                                                                                  |
|                                 | Method    | Written in ROM                                                                                                                         |
| Alarm Set-up<br>Vibrator Set-up | Type      | Side-Mounted Switch                                                                                                                    |
|                                 | Method    | Hi-Low                                                                                                                                 |
| Alarm Mode                      | Type      | Side-Mounted Switch                                                                                                                    |
|                                 | Method    | Vibration Alarm - Low Alarm - High Alarm                                                                                               |
| LED Indicator                   | Type      | LED                                                                                                                                    |
|                                 | Condition | Wet Mode---LED (Green) illuminates<br>Operating---LED (Red) blinks at every 1.5 sec.<br>Low Battery---LED (Red) blinks at every 1 sec. |

## ■Parts Description & Function



## ■ Can Not Detect Wetness

### ● Transmitter Problem ?

|                                     |   |                                                                                |
|-------------------------------------|---|--------------------------------------------------------------------------------|
| Does LED blink?                     | → | If no, check batteries and every connection.                                   |
| Do batteries have power?            | → | Check LED and change batteries.                                                |
| Are you operating within the range? | → | Keep the distance between the transmitter and receiver within 160ft, when use. |
| Is the battery case broken?         | → | If yes, call service department for repair.                                    |
| Is the transmitter case broken?     | → | If yes, call service department for repair.                                    |

### ● Receiver Problem ?

|                                     |   |                                                                                                      |
|-------------------------------------|---|------------------------------------------------------------------------------------------------------|
| Is the receiver on?                 | → | If no, turn it on with the side-mounted switch.<br>If yes and still not working, change batteries.   |
| Does the receiving indicator blink? | → | Turn off the receiver once and back on.<br>If still not working, call service department for repair. |

### ● Diaper Problem ?

|                                              |   |                                                                             |
|----------------------------------------------|---|-----------------------------------------------------------------------------|
| Is the sensor tape set properly              | → | Place the tape between the layers of the diaper.                            |
| Is the right side of the sensor tape placed? | → | Face the blue side to skin.                                                 |
| Is the sensor pad secured on the diaper?     | → | Use double-faced tape to secure the pad on the outer surface of the diaper. |
| Is the right side of the sensor pad placed?  | → | Face the side of the sensor tape to skin.                                   |

### ● Tape Adapter Problem ?

|                                                      |   |                         |
|------------------------------------------------------|---|-------------------------|
| break down of the wire?                              | → | Use a new tape adapter. |
| Is there dust in snap fastener?                      | → | Remove dust.            |
| No LED blinking after connecting to the Transmitter? | → | Change the tape adapter |

### ● Sensor Tape Problem?

|                                   |   |                                                                                     |
|-----------------------------------|---|-------------------------------------------------------------------------------------|
| Is the sensor tape twisted?       | → | Please straighten the sensor tape.                                                  |
| Check how wet the sensor tape is. | → | (A) Are both of aluminium parts wet?<br>(B) Please check whether really wet or not. |
| Is the length of the tape enough? | → | Minimum length is 17 inches.                                                        |

【Tro

### ● Sensor Pad Problem?

Sensor pad is broken?

Change the sensor pad.

Using the sensor pad over one month?

Change the sensor pad.

Check where is wet.

Apply the sensor pad where gets wet.

Sensor pad is apart from the diaper.

Fix the side of sensor pad on to the outer surface of the diaper firmly with double-faced tape.

### ■ The sensor comes on when the diaper is actually dry

#### ● Transmitter problem?

Is it wet near the snap fastener?

If yes, use after dry the hook.  
Use slow dry method.

Any suspicion of a short-circuited?

You need to replace the sensor

The sensor terminal on the plug is dirty.

Use after cleaning.

Storing with the battery and sensor in?

Store the transmitter after removing the battery and sensor

#### ● Receiver problem?

CPU is out of control?

Turn it off and remove the battery.  
Insert the battery after 10 seconds and turn it on.

#### ● Sensor tape adapter problem?

Is it wet near the snap fastener of tape adapter?

If yes, use after dry the tape adapter.  
Use slow dry method.

#### ● Sensor tape problem?

Is the tape wet?

If yes, change the sensor tape

#### ● Sensor pad problem?

Is the sensor pad wet?

If yes, use after drying the sensor pad.  
Use slow dry method.

Is the sensor pad broken?

If yes, change the sensor pad.

Using the sensor pad over one month?

If yes, change the sensor pad.

Is the sensor pad attached to the skin?

If yes, attach the sensor pad outside of the diaper.