

## Solar energy, wireless networks and sensor solutions

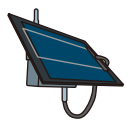
# SRPC Series

Tracking System



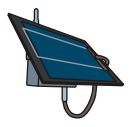
**SRPC-RRS**  
active tag.

Weather observation



**SRPC-WJ-WS**  
wind, precipitation, temperature, humidity

Agricultural support

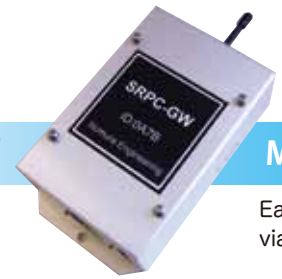


**SRPC-AGR series**  
example)  
**SRPC-AIR**...CO<sub>2</sub> sensor  
**SRPC-DN**...soil sensor, pyranometer

Active tag



SRPC-RRS



Mobile Gateway and Wired Gateway

Each SRPC transfer the data to the network server via Mobile Gateway.

■ SRPC series;  
consists of solar panel, LiFePo4 battery, wireless system and various sensors.  
It's really compact rain proof case with pole mounting bracket and provide a versatile wireless network solutions.

**Built-in solar energy system;**

8W solar panel, MPPT(Maximum Power Point Tracking) solar charger and 3.2V 10A LiFePo4 battery provide a independent power supply for the system operation. Web monitoring system provide a user friendly view for monitoring battery voltage, charge current, load current which are dynamically updated every 15minutes.

**True wireless solutions ;**

The SRPC unit does not require any wired connection is a complete wireless solution capable of working independent of AC power supply. SRPC series operates at 400MHz license free band which eliminate licensing costs. The unit can communicate within a radius of 2km and at height of 2M of line of sight.

**Various sensing data from anywhere ;**

Temperature, humidity, CO<sub>2</sub>, wind, precipitation, tag and various sensor devices can be connected to SRPC via versatile interface boards. Multiple SRPCs can be installed at intervals of 2km maximum in a daisy chain connection and one gateway manages those SRPCs. Each SRPC transfer those data to the network server via mobile gateway or wired gateway through the internet, or directly to the PC.

**User friendly web monitoring system ;**

The results of collected sensor data will be properly processed by the server and presented to the user on PC or smartphone. Free sample server software, starter kit and the maintenance PC software are provided so as to enable customers to quickly launch the monitoring system.

# Configuration example)

SRPC will be able to collect data from the various sensors using the same wireless communication system.

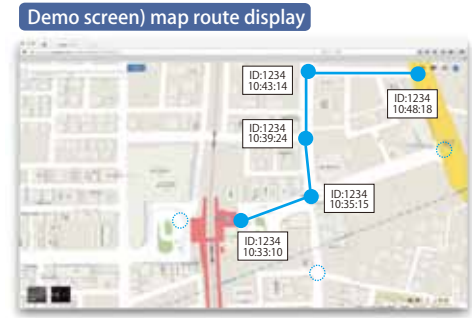
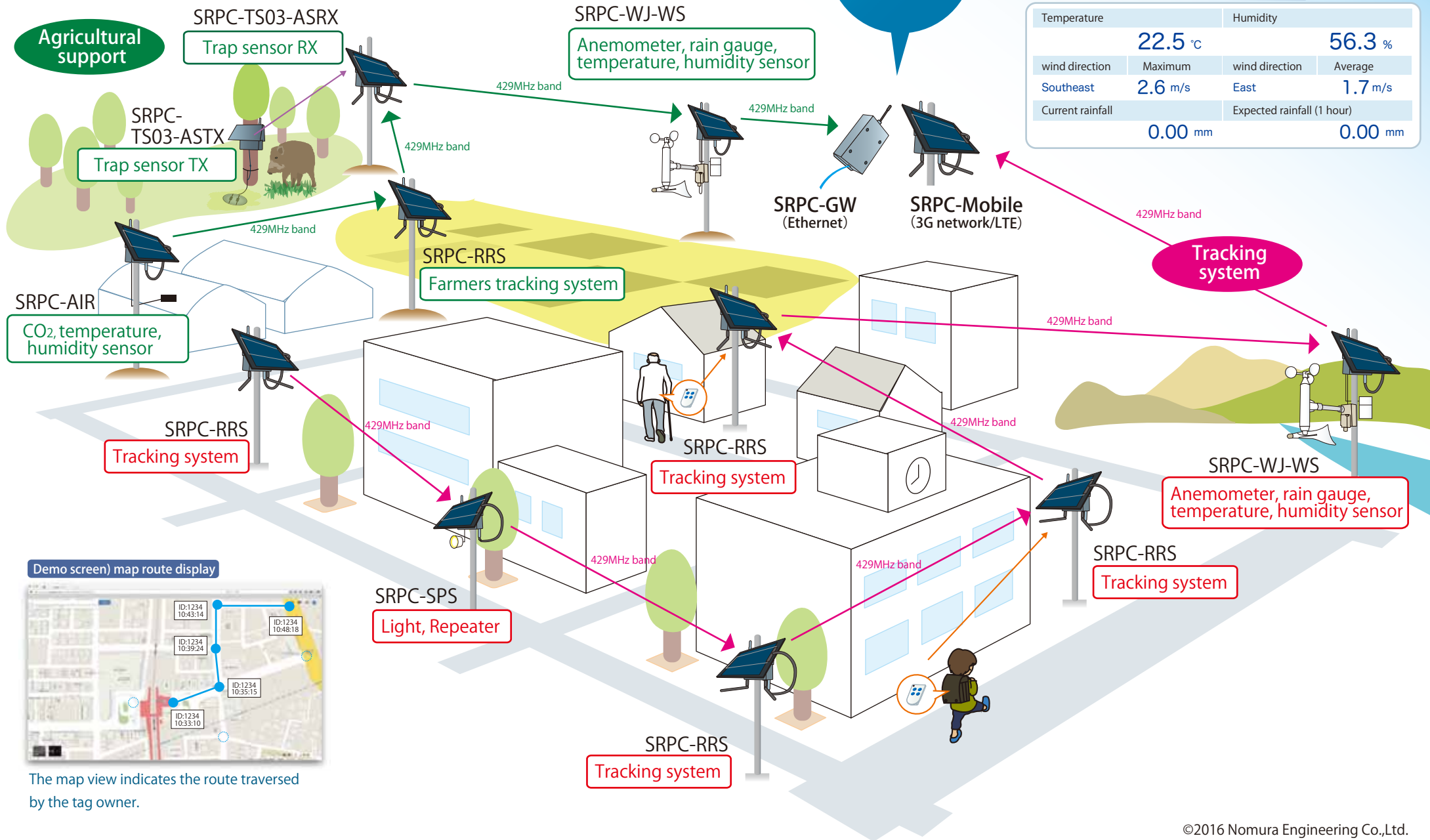
- Route① Agricultural support
- Route② Tracking system & Disaster prevention

All data is transferred to the Internet.

Log management, data analysis, graphing, anomaly detection, Tracking System will be displayed on the web. Emergency-mail notification function.

Demo screen) meteorological real-time display

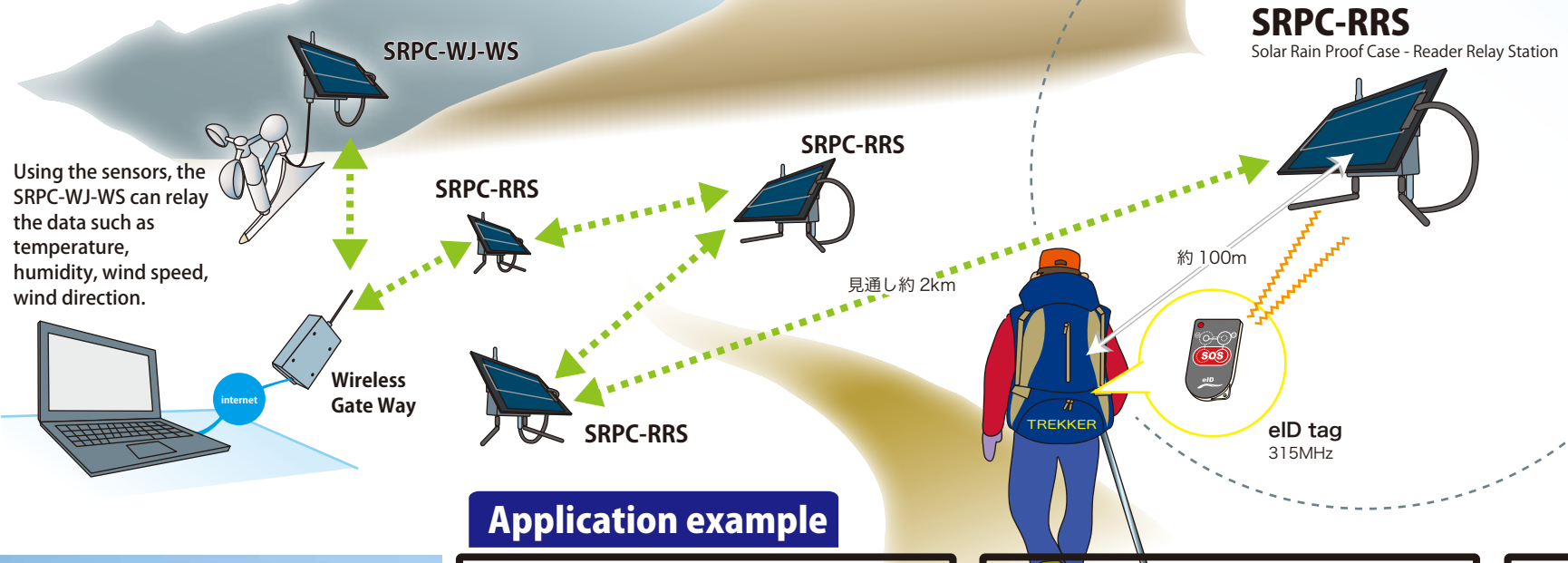
Temperature	Humidity		
22.5 °C	56.3 %		
wind direction	Maximum	wind direction	Average
Southeast	2.6 m/s	East	1.7 m/s
Current rainfall	Expected rainfall (1 hour)		
0.00 mm	0.00 mm		



The map view indicates the route traversed by the tag owner.

# Nepal Trekkers Tracking System demonstration

It has been installed on the 2,000~3,000m grade trekking course of Nepal. User friendly web portal will display the current position and passing information of trekkers. The family far from the country can be updated with the whereabouts of the trekker.



## Application example



**Kumamoto Pref.**

Agricultural support

22.1 °C	92.8 %	25.5 °C	57.7 %
25.4 °C	59.4 %	00:00	00:00

**Nagano Pref.**

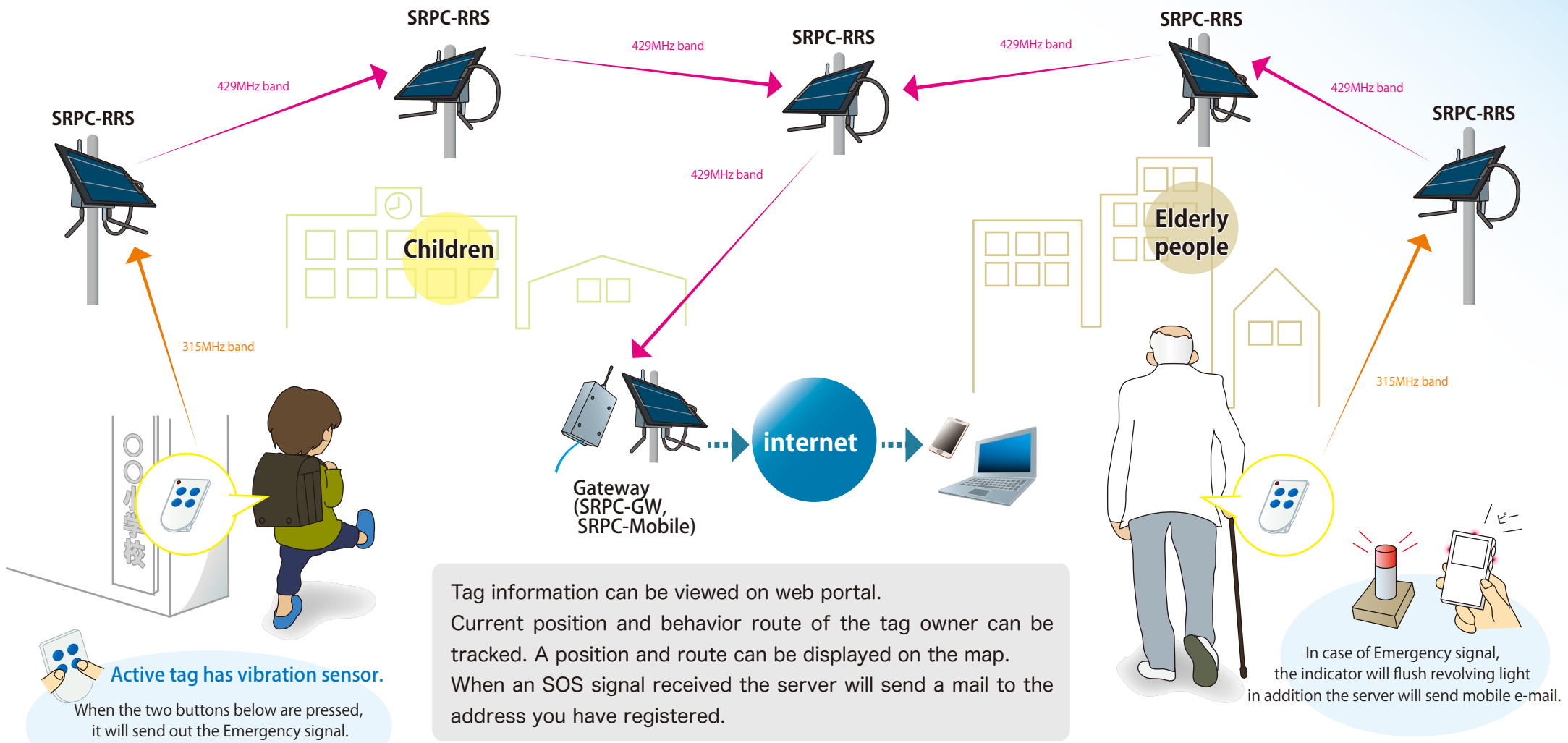
Trap sensor for wild boar

**Kanagawa Pref.**

Attendance management using the tag

# Children & Elderly people Tracking System

SRPC-RRS (tag receiver) will monitor the current position and behavior route of person such as children and the elderly with a tag.



Tag information can be viewed on web portal.  
 Current position and behavior route of the tag owner can be tracked. A position and route can be displayed on the map.  
 When an SOS signal received the server will send a mail to the address you have registered.

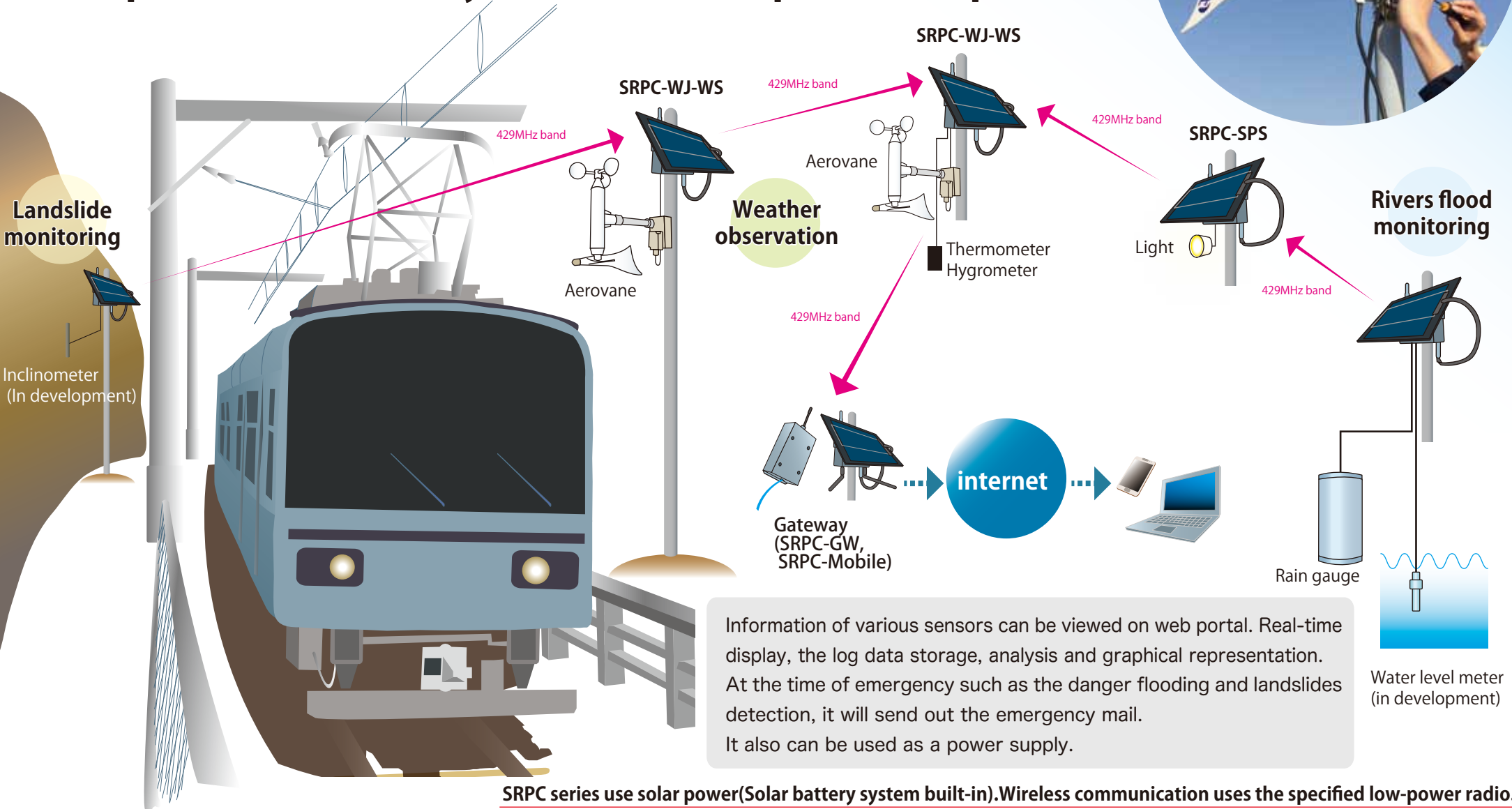
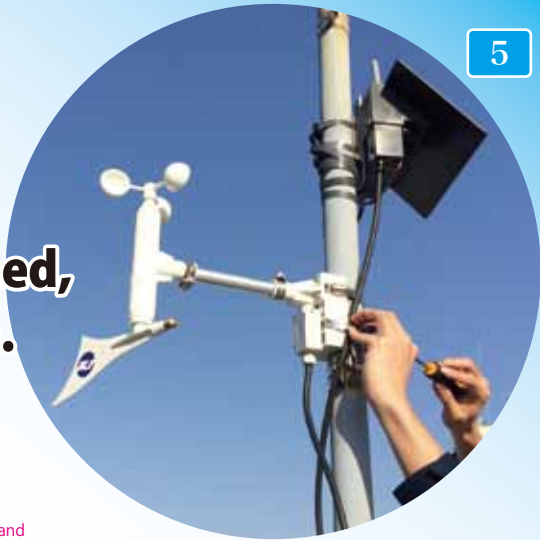
**Active tag has vibration sensor.**  
 When the two buttons below are pressed, it will send out the Emergency signal. Server will send an emergency e-mail. It will help in rescue and regional security.

**SRPC series use solar power(Solar battery system built-in).Wireless communication uses the specified low-power radio.**



# Weather observation

SRPC collects the sensor information such as wind direction, wind speed, temperature and humidity, rainfall. It will help in disaster prevention.

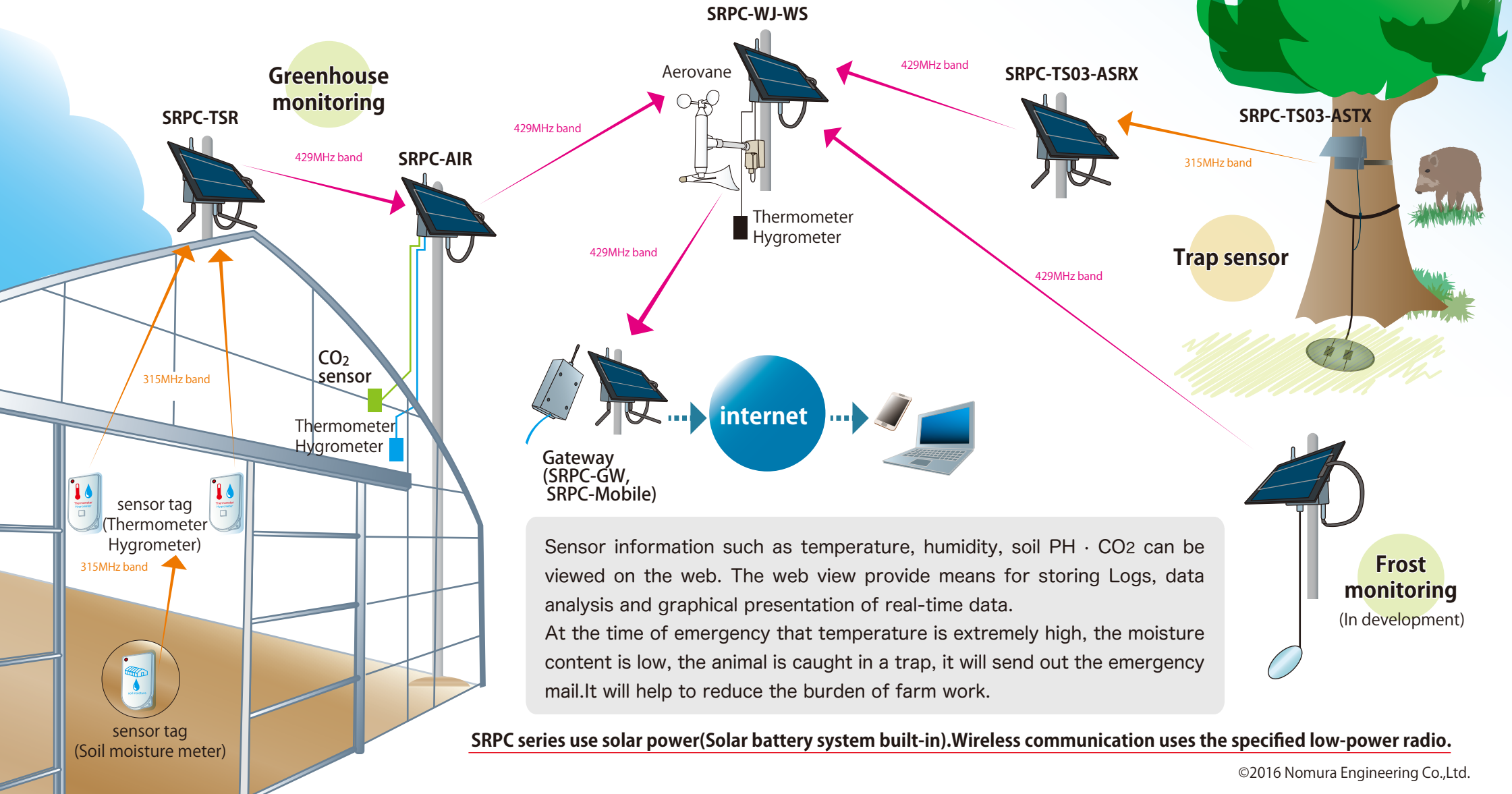


Information of various sensors can be viewed on web portal. Real-time display, the log data storage, analysis and graphical representation. At the time of emergency such as the danger flooding and landslides detection, it will send out the emergency mail. It also can be used as a power supply.

SRPC series use solar power(Solar battery system built-in).Wireless communication uses the specified low-power radio.

# Agricultural support

SRPC collects the sensor information such as temperature and humidity, trap sensor, concentration of CO<sub>2</sub>. It improves efficiency in a Greenhouse monitoring.



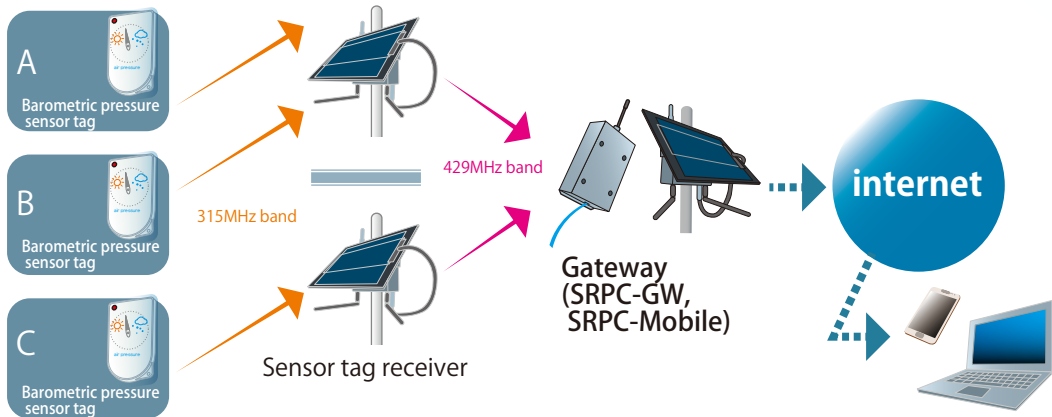
Sensor information such as temperature, humidity, soil PH · CO<sub>2</sub> can be viewed on the web. The web view provide means for storing Logs, data analysis and graphical presentation of real-time data.

At the time of emergency that temperature is extremely high, the moisture content is low, the animal is caught in a trap, it will send out the emergency mail.It will help to reduce the burden of farm work.

**SRPC series use solar power(Solar battery system built-in).Wireless communication uses the specified low-power radio.**

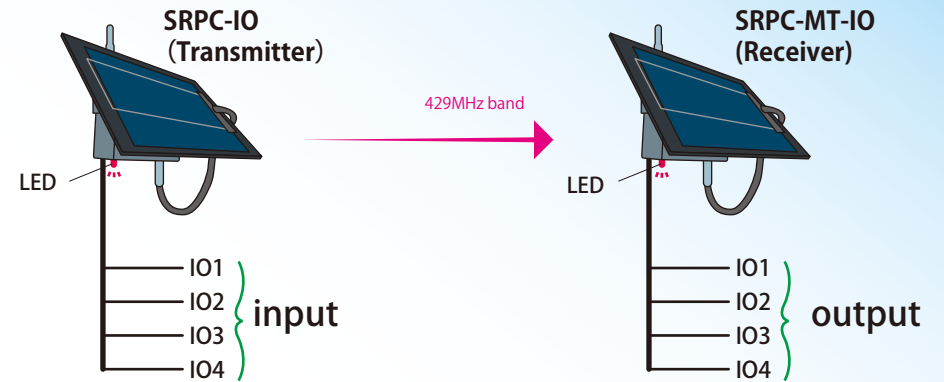
# Inventory control

It detects the location of the industrial equipment with the tag. A barometric pressure sensor tag can find out the current location of the equipment.



# ON/OFF Control

SRPC-IO can control 4 contacts for use in stand-alone.



# Software for Windows

## ① Setting, monitoring, CSV file output

This is a Windows software for performing route settings and status check of SRPC.

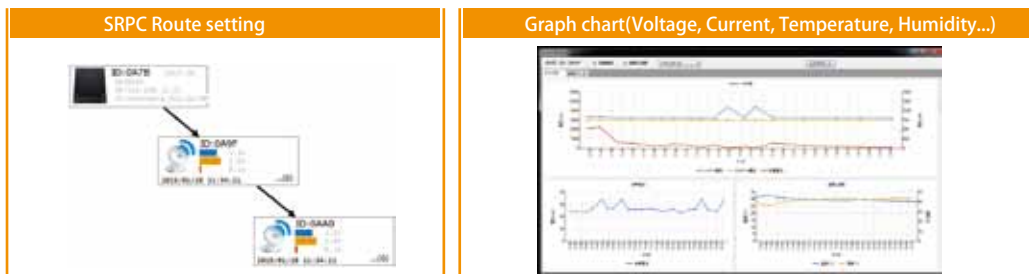
## ② Graph chart

This software will easily create graph by combining the necessary sensor data.

## ③ Data analysis

This software has the analysis of the log data.

It is possible to get the value(average value, maximum value, minimum value...) by specifying a date range, a date & time range.



# How to install the SRPC

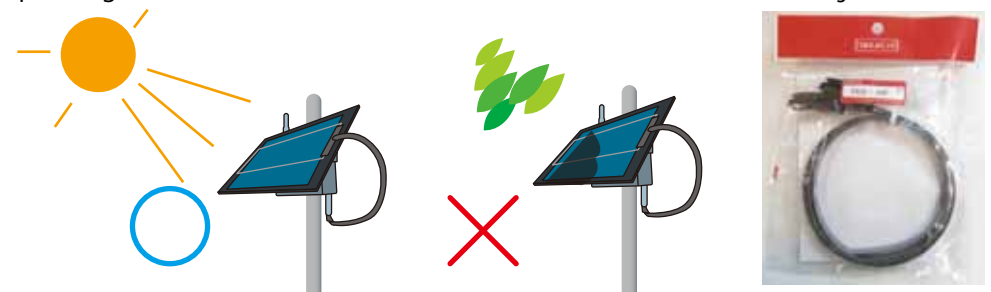
## ① Install the solar panel in the direction of direct sunlight.

South-facing is the best.

In the case of east and west, it is desirable to install it in the place where the sunlight strikes for at least three hours a day.

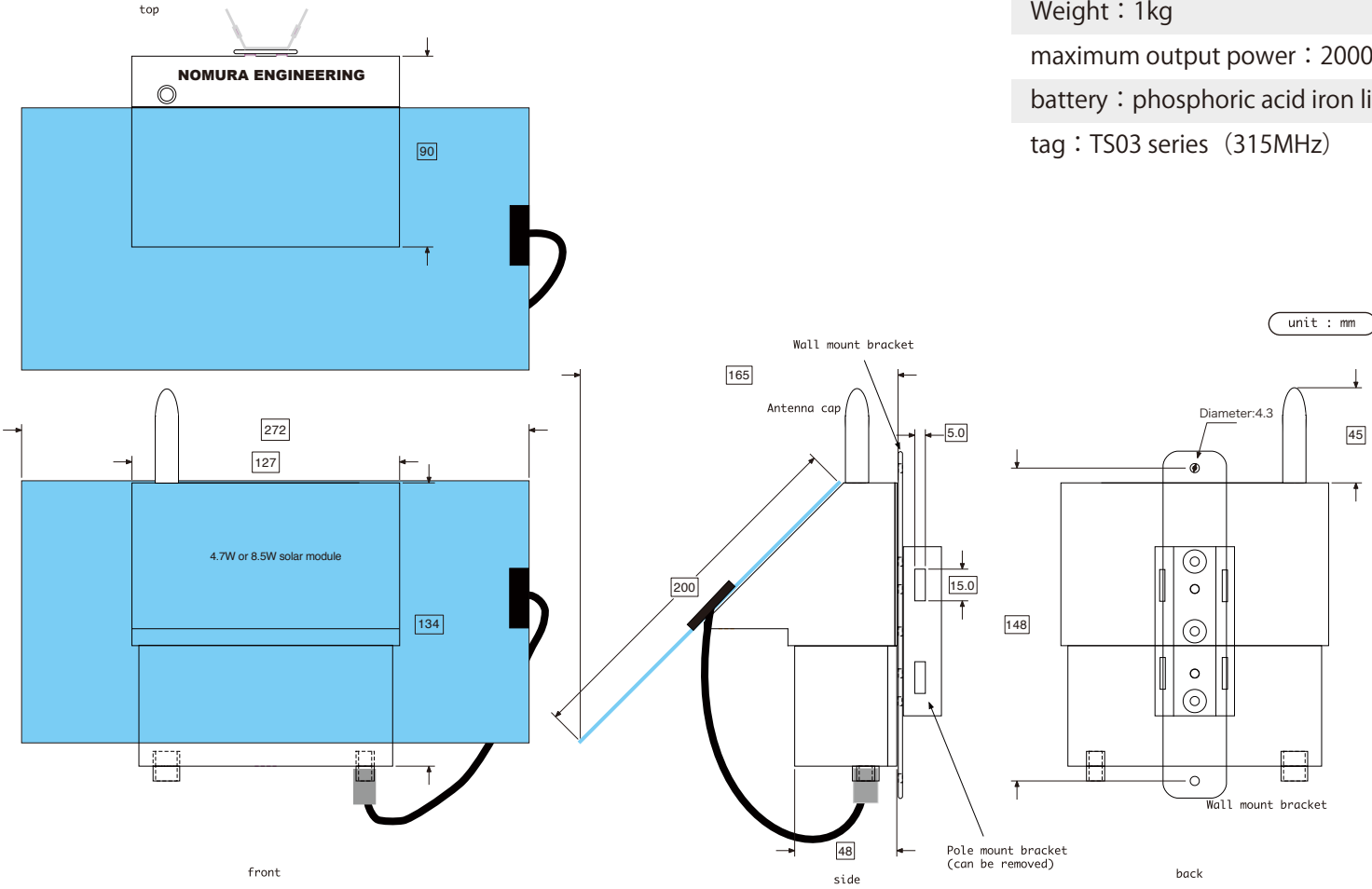
## ② Install the solar panel to the place that there is no shadow to the panel.

When the shadow is applied to the part of the solar panel, the total amount of power generation will be reduced.



# SRPC Series

## External dimensions



## Electrical Specifications

Frequency : 429.2500 ~ 429.7375MHz

Comm protocol : original protocol

Communication distance : 2km

consumption current : 40mA (Except for the external current consumption)

Output voltage : 3.2V,5.0V,12V

RF Power : 10mW

Operating temp. : -20 ~ 60°C (non condensing)

Size : dimensional outline drawing

Weight : 1kg

maximum output power : 2000mW

battery : phosphoric acid iron lithium battery 3.2V 10Ah MPPT charge method

tag : TS03 series (315MHz)

## Nomura Engineering Co., Ltd.

1-7-2 Shibuya, Yamato-shi, Kanagawa, 242-0023, Japan  
 Phone : +81-46-244-0041 (Sales, Customer service)  
 Phone : +81-46-244-0771 (Technical Support)  
 Fax : +81-46-244-3551  
 Email: info@nomura-e.co.jp  
 URL: <http://www.nomura-e.co.jp>