Solar energy, wireless networks and sensor solutions
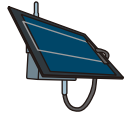# SRPC Series

Active tag

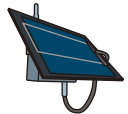**SRPC-RRS**

Tracking System
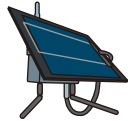
SRPC-RRS
active tag.

Weather observation

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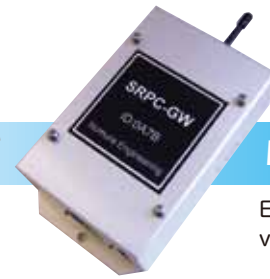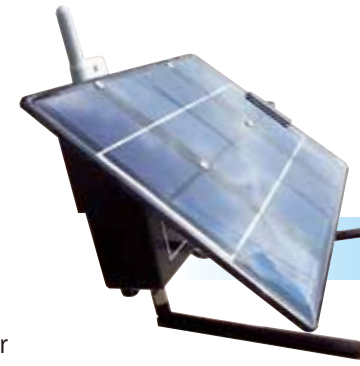wind, precipitation, temperature, humidity

Agricultural support

SRPC-AGR series
example）
SRPC-AIR···CO_2 sensor
SRPC-DN···soil sensor, pyranometer

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.

Various sensing data from anywhere ;

Temperature, humidity, CO_2, 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.

True wireless solutions ;

The SRPC unit does not requre 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.

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**
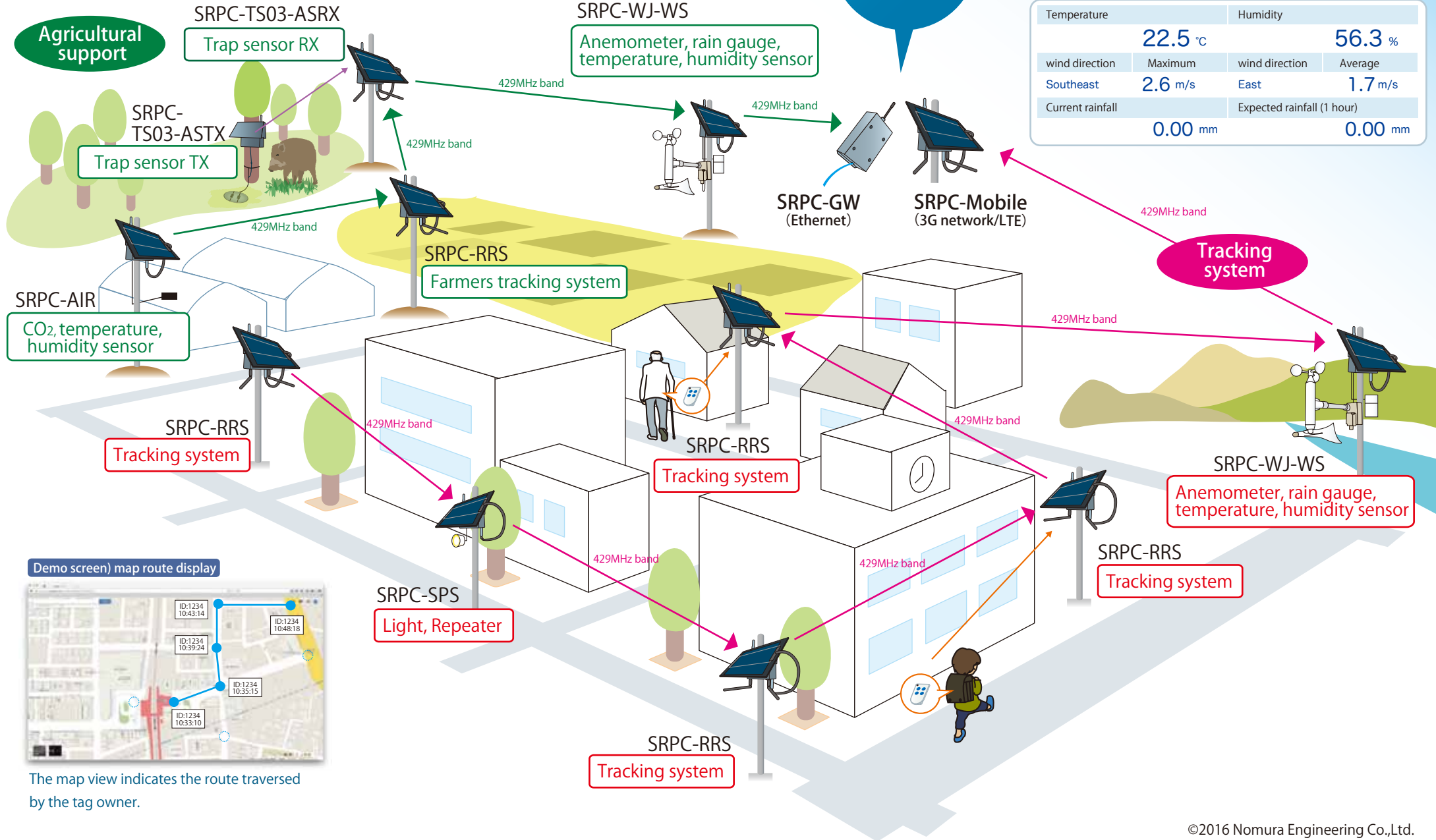
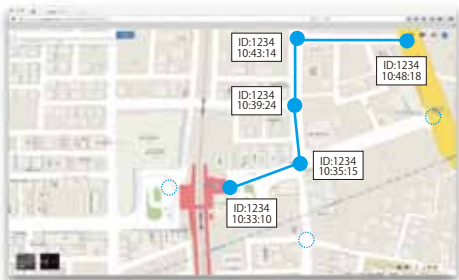→ **Route②** **Tracking system & Disaster prevention**

Agricultural support

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 ℃		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	

All data is transferred to the Internet.

SRPC-TS03-ASRX
Trap sensor RX

SRPC-TS03-ASTX
Trap sensor TX

SRPC-WJ-WS
Anemometer, rain gauge, temperature, humidity sensor

429MHz band

SRPC-AIR
CO₂, temperature, humidity sensor

SRPC-GW
（Ethernet）

SRPC-Mobile
（3G network/LTE）

SRPC-RRS
Farmers tracking system

Tracking system

429MHz band

SRPC-RRS
Tracking system

SRPC-RRS
Tracking system

SRPC-WJ-WS
Anemometer, rain gauge, temperature, humidity sensor

SRPC-SPS
Light, Repeater

SRPC-RRS
Tracking system

SRPC-RRS
Tracking system

Demo screen) map route display

ID:1234 10:43:14
ID:1234 10:48:18
ID:1234 10:39:24
ID:1234 10:35:15
ID:1234 10:33:10

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

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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.

SRPC-WJ-WS

Using the sensors, the SRPC-WJ-WS can relay the data such as temperature, humidity, wind speed, wind direction.

internet

Wireless Gate Way

SRPC-RRS

SRPC-RRS

SRPC-RRS

見通し約 2km

SRPC-RRS
Solar Rain Proof Case - Reader Relay Station

約 100m

TREKKER

SOS
eID

eID tag
315MHz
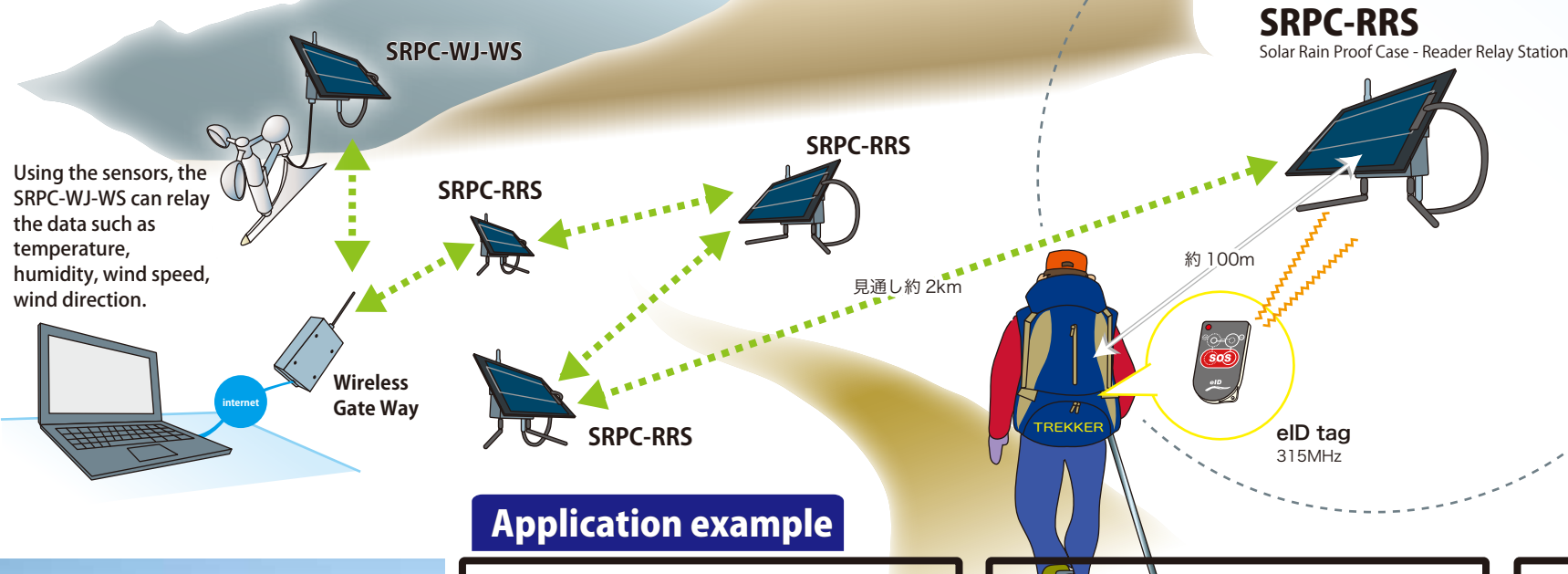
Application example

Kumamoto Pref.

Agricultural support

22.1 ℃ 92.8 %   25.5 ℃ 57.7 %

25.4 ℃ 59.4 %
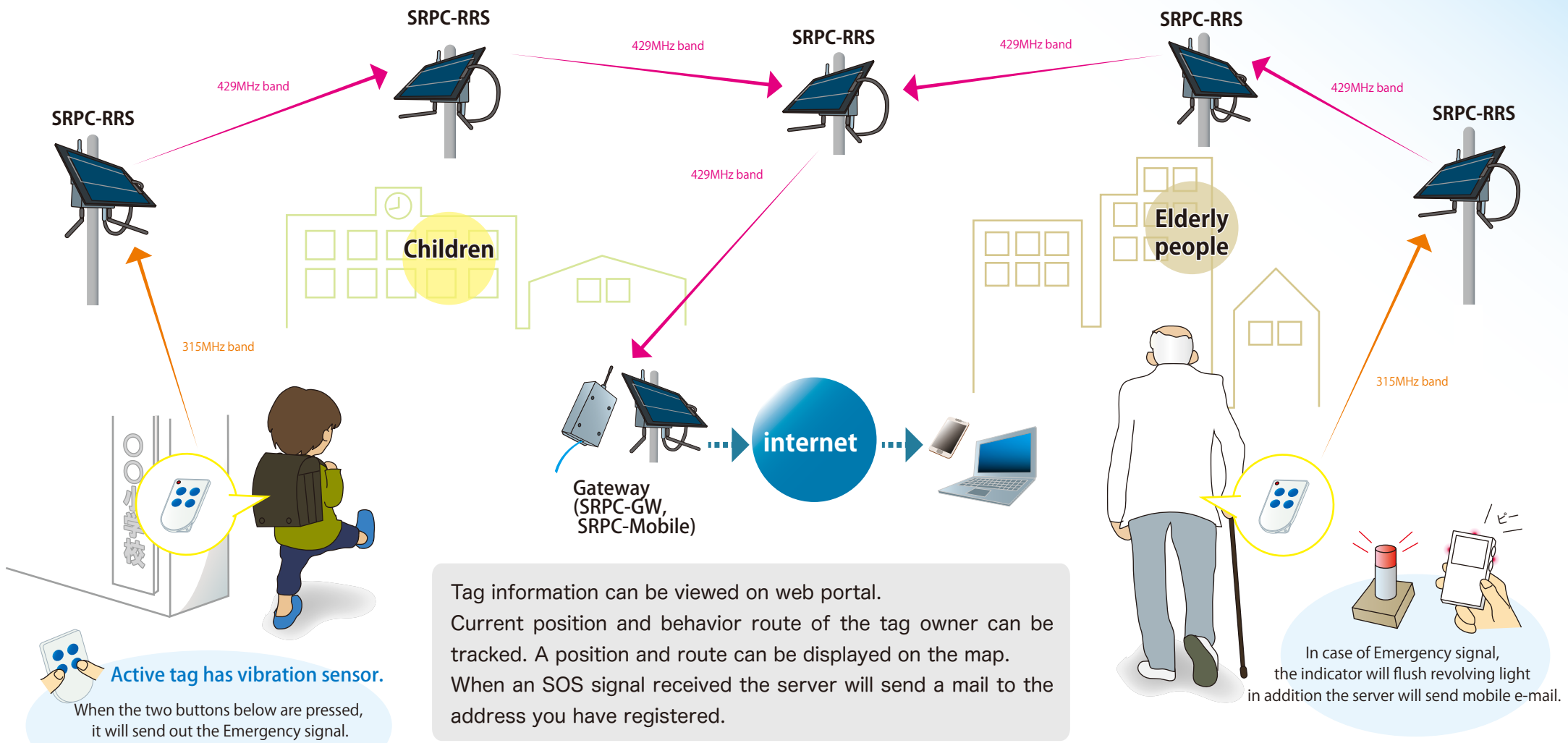
00 ㎩   00 ㎥

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.

SRPC-RRS

429MHz band

SRPC-RRS

429MHz band

SRPC-RRS

429MHz band

SRPC-RRS

SRPC-RRS

429MHz band

429MHz band

Children

Elderly people

315MHz band

315MHz band

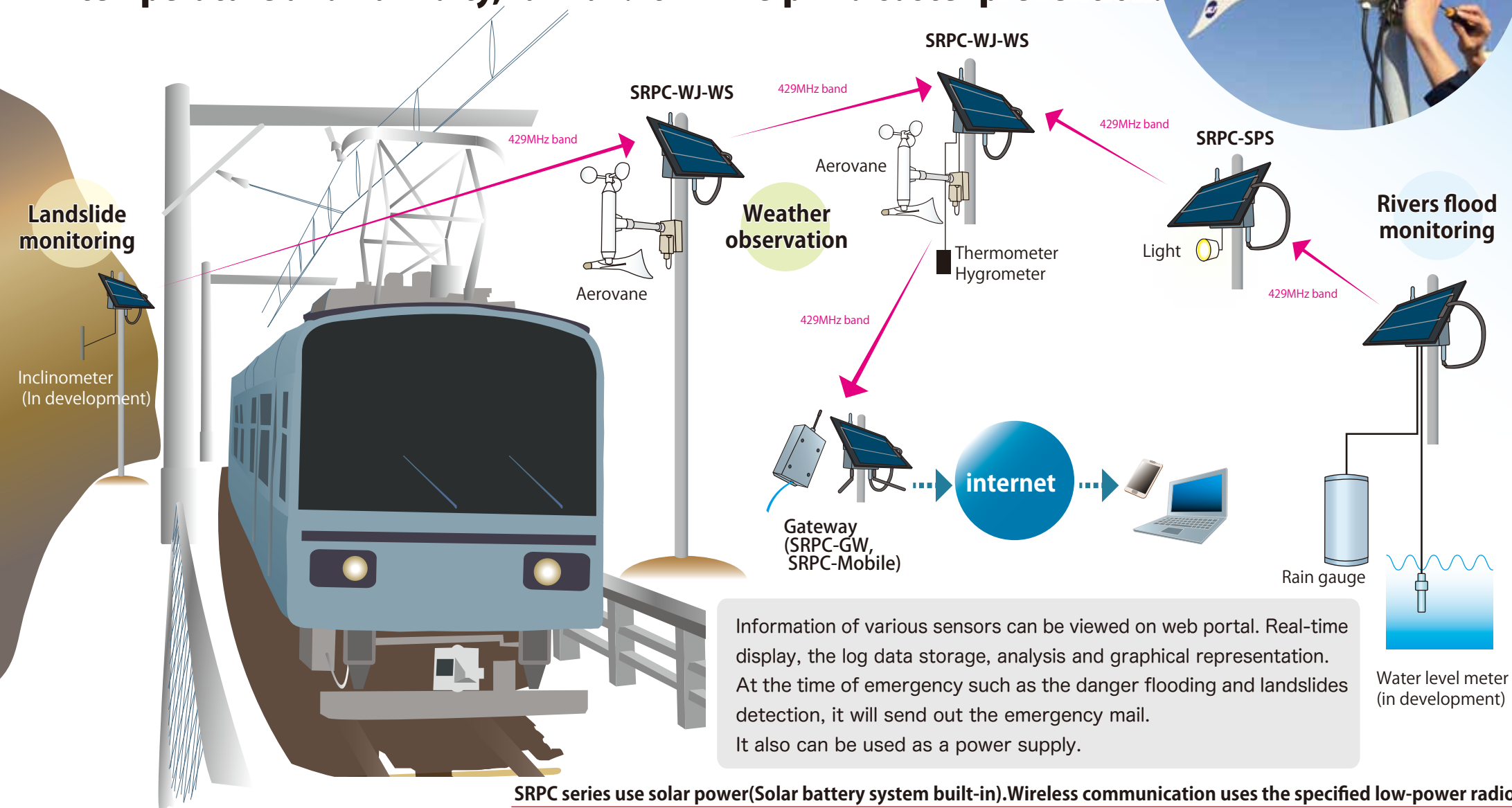internet

Gateway
(SRPC-GW,
SRPC-Mobile)

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.

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.

In case of Emergency signal, the indicator will flush revolving light in addition the server will send mobile e-mail.

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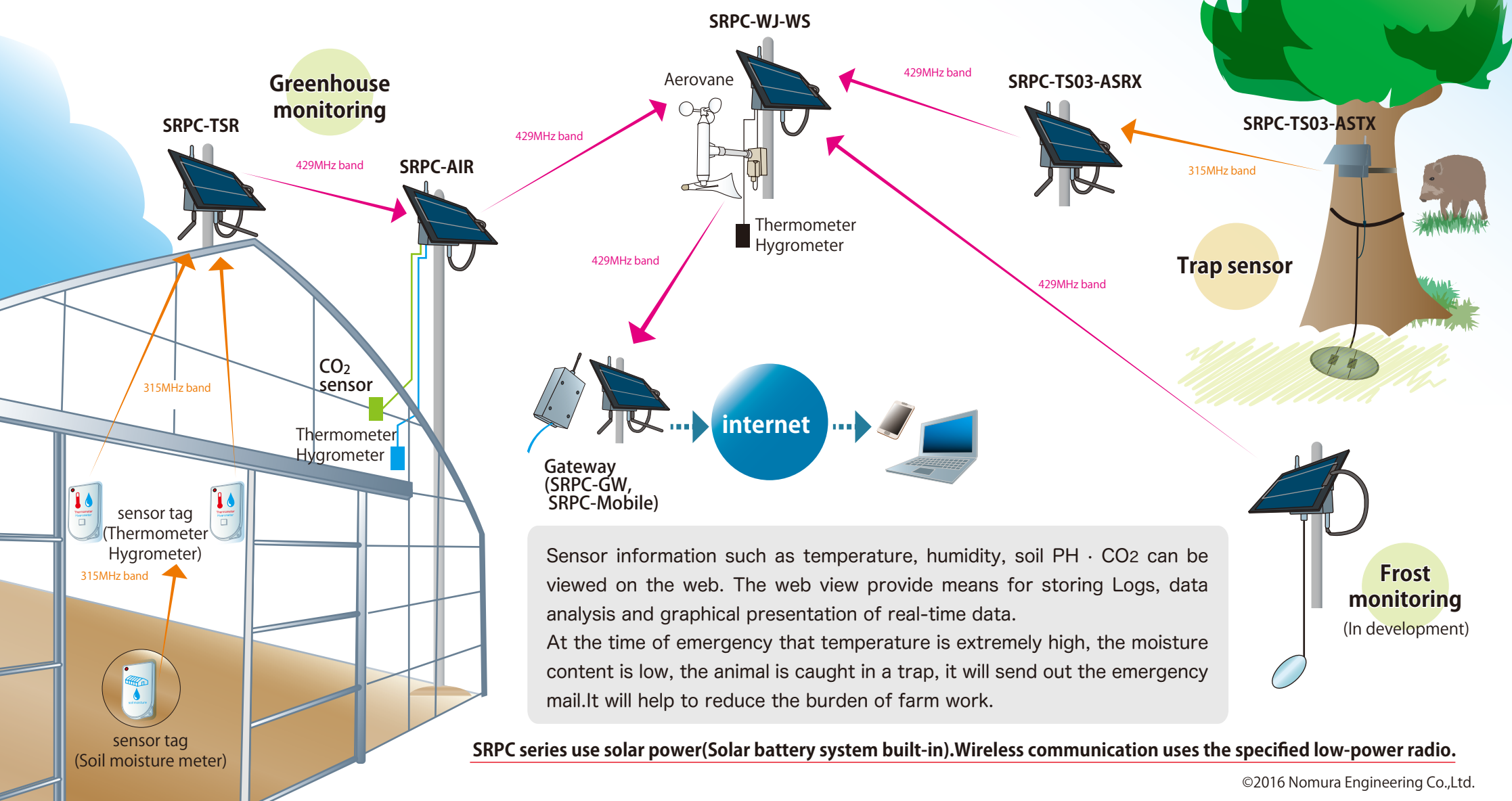
Weather observation

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

SRPC-WJ-WS

SRPC-WJ-WS

429MHz band

429MHz band

429MHz band

SRPC-SPS

429MHz band

Landslide monitoring

Aerovane

Weather observation

Aerovane

Rivers flood monitoring

Light

Inclinometer (In development)

Aerovane

Thermometer Hygrometer

429MHz band

429MHz band

Gateway (SRPC-GW, SRPC-Mobile)

internet

Rain gauge

Water level meter (in development)

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.

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Agricultural support

SRPC collects the sensor information such as temperature and humidity, trap sensor, concentration of CO₂. It improves efficiency in a Greenhouse monitoring.
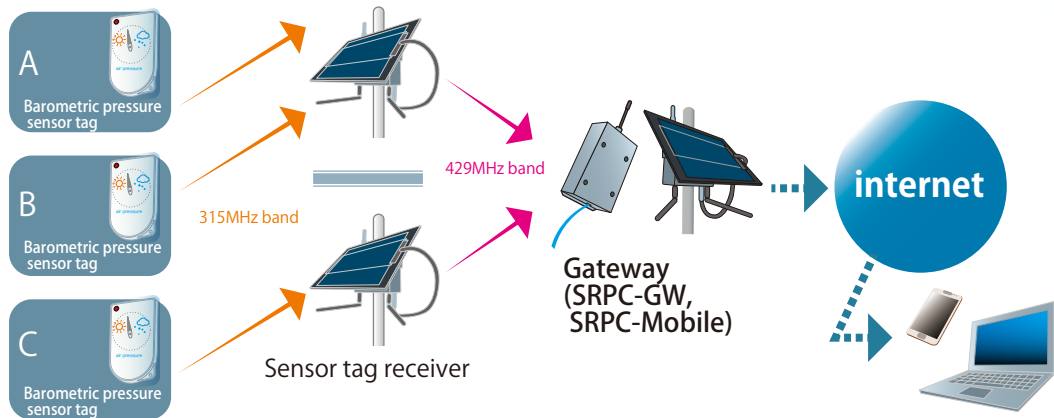
SRPC-WJ-WS

Aerovane

SRPC-TSR

Greenhouse monitoring

429MHz band

SRPC-AIR

429MHz band

429MHz band

SRPC-TS03-ASRX

SRPC-TS03-ASTX

315MHz band

Trap sensor

Thermometer Hygrometer

429MHz band

429MHz band

CO_2 sensor

315MHz band

Thermometer Hygrometer

internet

sensor tag (Thermometer Hygrometer)

315MHz band

Gateway (SRPC-GW, SRPC-Mobile)

Frost monitoring

(In development)

sensor tag (Soil moisture meter)

Sensor information such as temperature, humidity, soil PH・CO₂ 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.
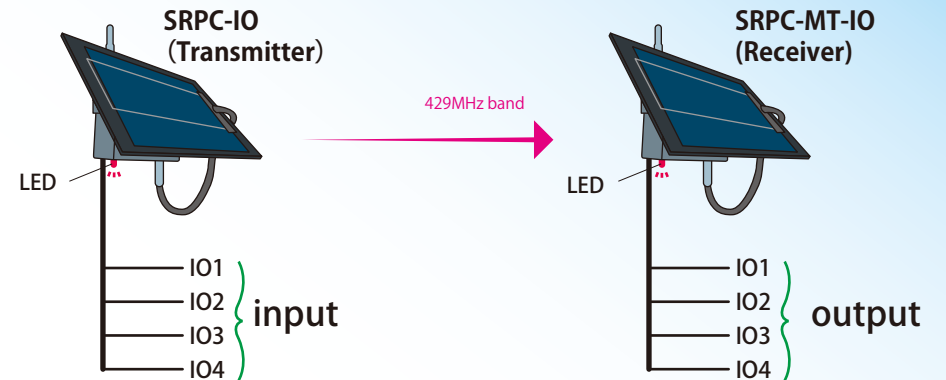
Inventory control

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.

A
Barometric pressure sensor tag

B
Barometric pressure sensor tag

C
Barometric pressure sensor tag

315MHz band

429MHz band

Sensor tag receiver

Gateway
(SRPC-GW,
 SRPC-Mobile)

internet

ON/OFF Control

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

SRPC-IO
(Transmitter)

429MHz band

SRPC-MT-IO
(Receiver)

LED

LED

IO1
IO2   input
IO3
IO4

IO1
IO2   output
IO3
IO4

Software for Windows

①Setting、monitoring、CSV file output
　This is a Windows software for performing route settings and status check of SRPC.

②Graph chart
　This software will easily create graph by combining the necessary sensor data.

③Data 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.

SRPC Route setting

Graph chart(Voltage, Current, Temperature, Humidity…)
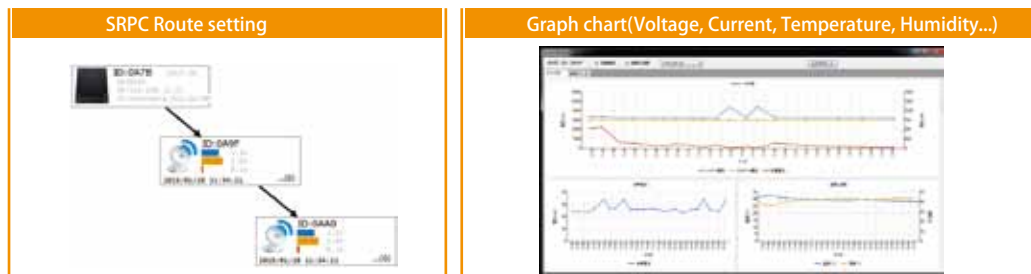
How to install the SRPC

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.
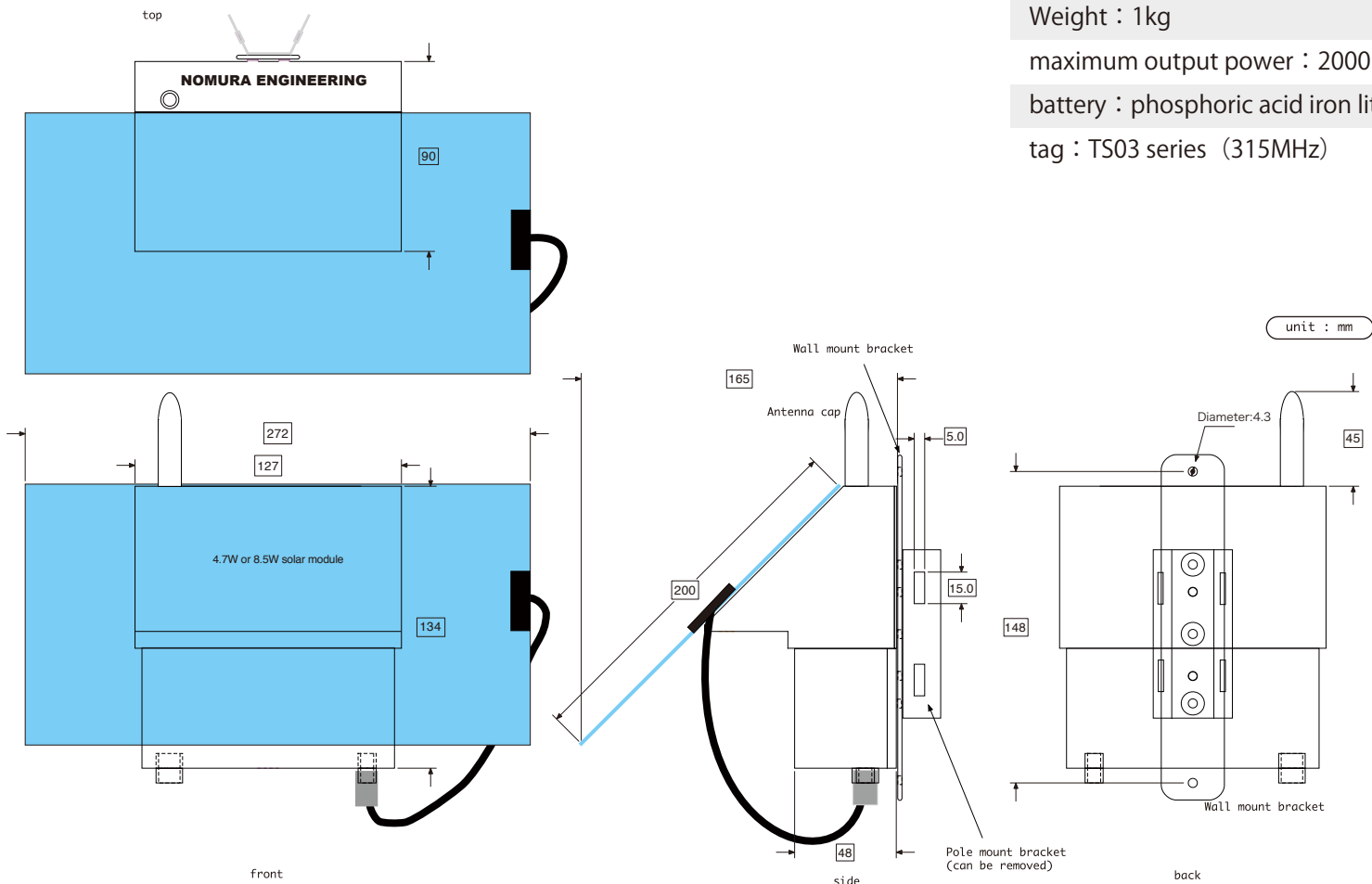
② Install the solar panel to the place that the there is no shadow to the panel.
　When the shadow is applied to the part of the solar panel, the total amount of power generation will be reduced.

Mounting band

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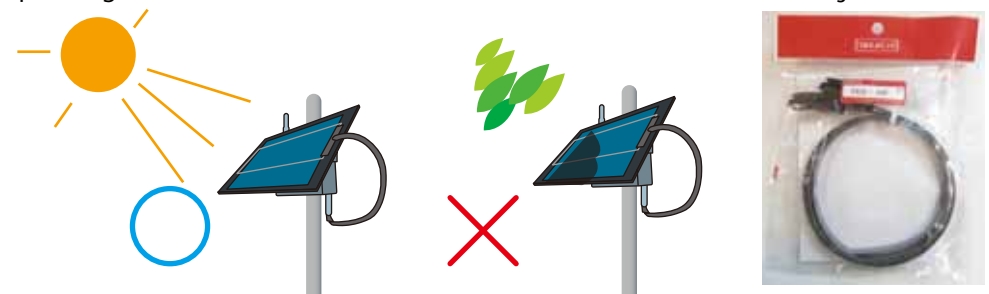
SRPC Series

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℃（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）

External dimensions

top

NOMURA ENGINEERING

90

272

127

4.7W or 8.5W solar module

134

front

unit : mm

Wall mount bracket

165

Antenna cap

5.0

200

15.0

48

side

Pole mount bracket
(can be removed)

Diameter:4.3

45

148

Wall mount bracket

back

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