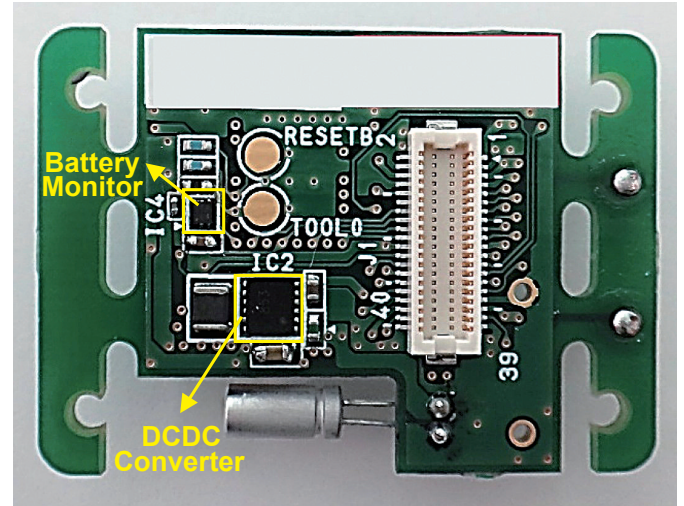
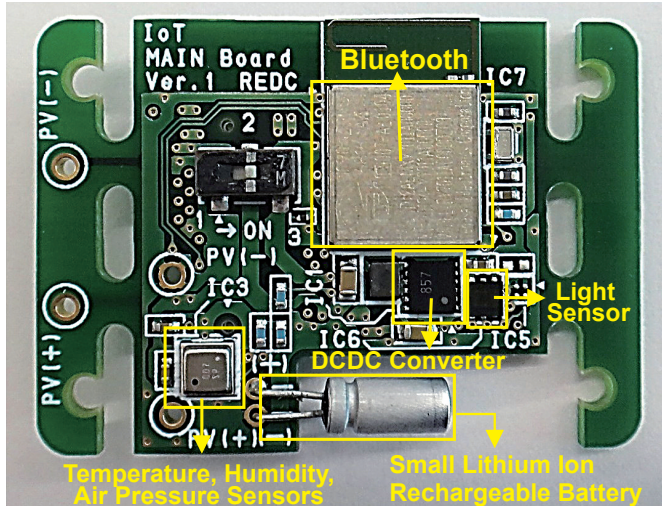


Self-powered Environmental Sensor using Energy Harvesting Technologies for the IoT System

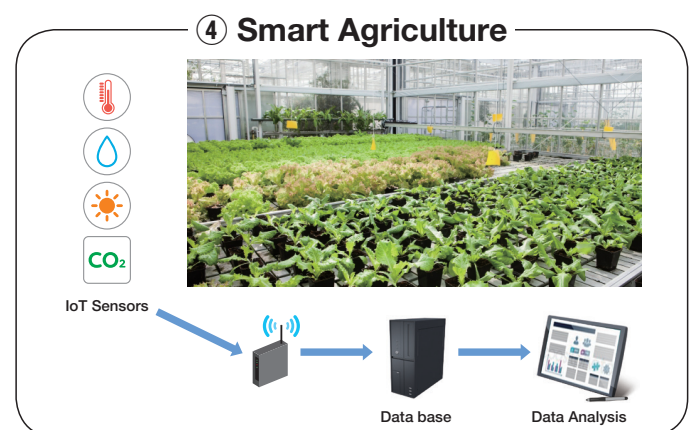
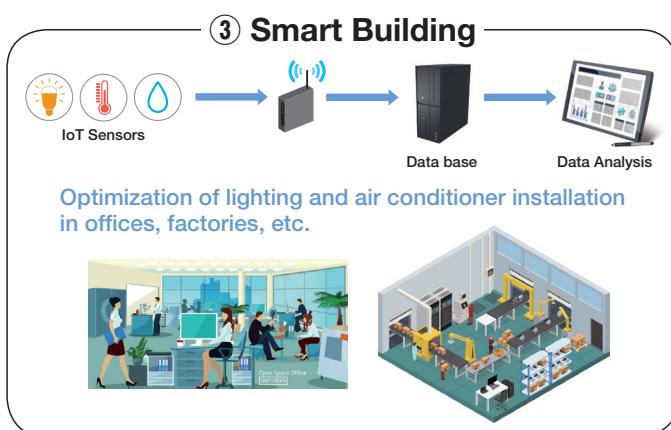
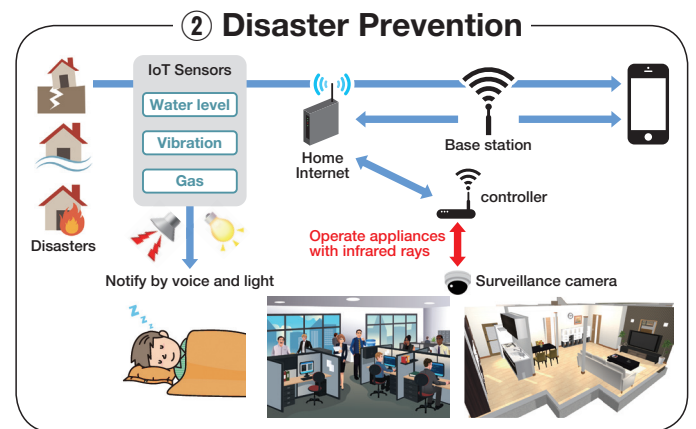
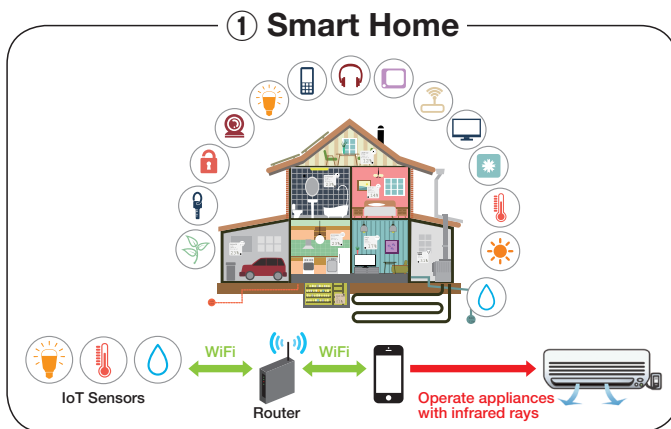
» Environmental Sensor



» Features

- By using Nichicon's high performance "Small Lithium Ion Rechargeable Battery" no battery replacement is needed
- The DC / DC converter maximizes the power generation of the solar cell, at the same time, prevents charging loss by the backflow prevention circuit.
- By adding the battery monitor assist function it is easy to evaluate the electricity storage level.

» Use for the IoT Systems

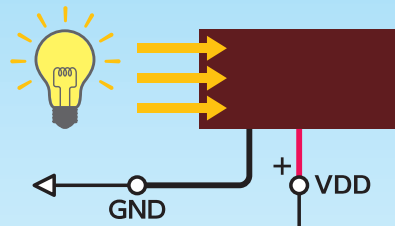
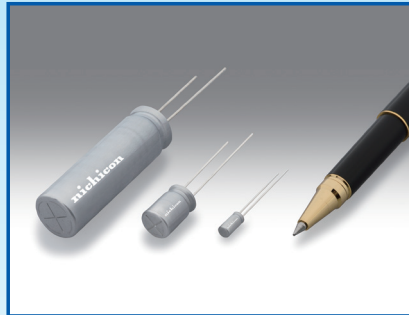


Environmental Sensor Demo

Using a RICOH Electronic Devices' power supply IC and Nichicon's Small Lithium Ion Rechargeable Battery makes it possible to drive environmental sensors for a long time.

nichicon

Small Lithium Ion Rechargeable Battery



DCDC R1800K

2.7V^{※1}

DCDC RP604

LDO Battery monitor

2.0V^{※2}

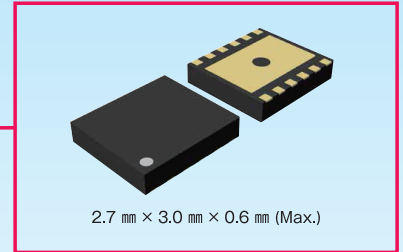
VDD Sensor I2C

VDD MCU+RF I2C

RICOH

R1800K Series

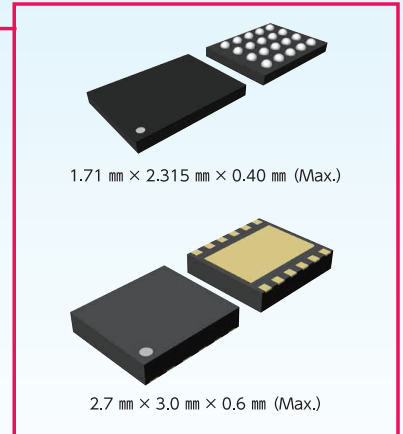
Low quiescent current (IQ / 144 nA) buck DC/DC converter for energy harvester



2.7 mm × 3.0 mm × 0.6 mm (Max.)

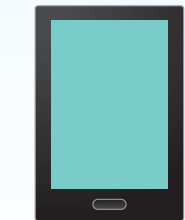
RP604x Series

Low quiescent current (IQ / 0.3 μA) synchronous rectification type PWM/FM buck-boost DC/DC converter



1.71 mm × 2.315 mm × 0.40 mm (Max.)

2.7 mm × 3.0 mm × 0.6 mm (Max.)

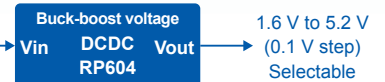


Monitors the temperature, humidity, atmospheric pressure, illuminance, battery voltage.

※1: We have set the R1800K output to 2.7 V to align with the charging voltage of the Small Lithium Ion Rechargeable Battery. It is also possible to change this to 2.8 V.

※2: The sensor & MCU+RF operates at 2.0 V from the viewpoint of power saving in this environmental sensor. The RP604 can be driven from 1.8 V. Therefore, it is possible to use up to the lower limit voltage of the Small Lithium Ion Rechargeable Battery.

Small Lithium Ion Rechargeable Battery	
Rated voltage	2.4V
Maximum charging voltage (During continuous charging)	2.8V
Discharge cutoff voltage (During continuous charging)	1.8V



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URL <http://www.nichicon.co.jp/english>

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SAFETY PRECAUTIONS

- Please use this product in accordance with NICHICON's product specifications. If the customer uses this product in a manner other than indicated in the delivery specifications, NICHICON will not assume responsibility in the event of failure.

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