RX Cloud Solution - Simplifies IoT Development on AWS

RX65N CLOUD KIT

Overview

The cloud-based services have become essential to efficiently process the enormous data volume involved. To reduce the barriers to development, the RX65N Cloud Kit is an all-in-one evaluation kit enabling customers to easily build and evaluate cloud-based communication environments, allowing even customers with little experience to start development of the IoT devices without any delay.

Features

- FreeRTOS™ qualified
- Easy connection to AWS Cloud using MQTT, TLS, TCP/IP protocol
- Send three types of sensor data (temperature/humidity, brightness and three-axis accelerometer) to the AWS cloud and view a graphical display on Renesas Dashboard*
- Wireless communication using Silex Wi-Fi module
- OTA features under development (Q4’20)

* Renesas Dashboard: A Renesas system allowing users to view data sent to the cloud in graphical format on a web browser.

Benefits

- Safe and secure connection to AWS Cloud
- Connect various applications to the Cloud immediately
- Provide application notes and sample programs to assist in IoT device prototyping
- Shorten development time with available sample program and software library
- Easy development environment with e² Studio IDE
- Code generator features
- Import of FreeRTOS integration
- Compliant to radio law in FCC (US), CE (Europe), TELEC (Japan)

Target Applications

- Industrial Automation
- Building Automation
- Smart Home
- IoT Cloud (Internet of Things)
- Smart Meter
- Office Automation

Application Example

~ Cloud & Sensor Solution for IoT Endpoints ~

```
USB

Buck Regulator
ISL80019

Digital 3.3V

MCU
RX65N

UART

Wi-Fi Module
Silex

5V

LDO
ISL9021A

Analog 3.3V for Sensor

Light Sensor
ISL29035

Gas Sensor
ZMOD4410

Humidity & Temperature Sensor
HS3002

Wi-Fi

Cloud
```

renesas.com
RX65N CLOUD KIT

Development Tools and Support

<table>
<thead>
<tr>
<th>Development Tools</th>
<th>Benefits</th>
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<tbody>
<tr>
<td>IDE – e² Studio</td>
<td><img src="image1" alt="Automatically generates FreeRTOS™ source code" /></td>
</tr>
<tr>
<td>(v7.5.0 and later)</td>
<td><img src="image2" alt="Generate and build the latest FreeRTOS™ sample projects from GitHub" /></td>
</tr>
<tr>
<td></td>
<td><img src="image3" alt="Provides required drivers, network stacks (TCP/IP, Wi-Fi®, MQTT), and component libraries assist setting (Device Shadow)" /></td>
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<tr>
<td></td>
<td><img src="image4" alt="Add and implement middleware and drivers (USB and file systems) easily on IoT devices" /></td>
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</tbody>
</table>

Development Environment and System Block

Orderable Part Numbers

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Compliance</th>
<th>Orderable Part Number</th>
</tr>
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<tbody>
<tr>
<td>RX65N Cloud Kit (Europe, Japan)</td>
<td>CE, TELEC</td>
<td>RTK5RX65N0S00000BE</td>
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<tr>
<td>RX65N Cloud Kit (North America)</td>
<td>FCC</td>
<td>RTK5RX65N0S01000BE</td>
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For more information, visit us at [www.renesas.com/rx65n-cloud](http://www.renesas.com/rx65n-cloud)

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