Cloud Connectivity Solution

Cloud Connectivity for your IoT Devices

Benefit

- **Certified Device**: AWS and Microsoft partner qualification by Certified Device
- **Quick Started**: Cloud Connectivity & OTA by Dedicated Evaluation kits
- **Smart Development**: GUI-based easy RTOS import & development by Tool

Features

Certified MCU by Cloud Vendor

- Certified by AWS and Microsoft
  RX is a suitable MCU for IoT devices that can implement Cloud connectivity, Secure communication and OTA feature.

Suitable Evaluation kit

- Cloud connectivity with this one
  Evaluation kits for developing IoT devices equipped with a Cellular module and 6 sensors. Other kits for Ether and Wi-Fi are also available.

User Friendly Development Environment

- Provide suitable RTOS and S/W for IoT with RX
  - Certified for FreeRTOS of AWS, AzureRTOS of Microsoft
  - Sensor data upload and monitoring via Cloud
  - OTA Firmware update sample program
  - Various IoT related Application Note and program

- Quick and Easy Start by Renesas IDE
  - New project creation for FreeRTOS and AzureRTOS
  - FWUP FIT Driver for either RTOS or BareMetal
  - Automatically set clock and PIN functions according to Evaluation kits and MCU used
  - Simply set peripheral functions based on GUI by Smart Configurator
  - OTA assist Tool ‘QE for OTA’

AWS Device Catalog
Azure Device Catalog

Renesas CK-RX65N

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## Cloud Connectivity Solution

### MCU

<table>
<thead>
<tr>
<th>Part Name</th>
<th>CPU</th>
<th>Frequency</th>
<th>ROM</th>
<th>RAM</th>
<th>Trusted Secure IP</th>
<th>RX Driver support</th>
</tr>
</thead>
<tbody>
<tr>
<td>RX72M/RX72N</td>
<td>RXv3</td>
<td>240 MHz</td>
<td>4 MB</td>
<td>1 MB</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>RX66N</td>
<td>RXv3</td>
<td>120 MHz</td>
<td>4 MB</td>
<td>1 MB</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>RX671</td>
<td>RXv3</td>
<td>120 MHz</td>
<td>2 MB</td>
<td>384 KB</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>RX65N/RX651</td>
<td>RXv2</td>
<td>120 MHz</td>
<td>2 MB</td>
<td>640 KB</td>
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<td>✓</td>
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### Evaluation Kits

<table>
<thead>
<tr>
<th>Kit Name</th>
<th>Orderable Part Number</th>
<th>AWS</th>
<th>Azure</th>
<th>Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renesas Starter Kit+ for RX65N-2MB</td>
<td>RTK50565N2S10000BE</td>
<td>✓</td>
<td>✓</td>
<td>Ether</td>
</tr>
<tr>
<td>RX65N Cloud Kit for EU, JPN, SGP</td>
<td>RTK5RX65N0S00000BE</td>
<td>✓</td>
<td>✓</td>
<td>Wi-Fi</td>
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<tr>
<td>for US</td>
<td>RTK5RX65N0S01000BE</td>
<td>✓</td>
<td>✓</td>
<td>Ether, Wi-Fi</td>
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<tr>
<td>RX72N Envision Kit</td>
<td>RTK5RX72N0C00000BJ</td>
<td>✓</td>
<td>✓</td>
<td>Wi-Fi</td>
</tr>
<tr>
<td>Renesas Starter Kit+ for RX671</td>
<td>RTK5RX671EHS10000BE</td>
<td>✓</td>
<td>✓</td>
<td>Wi-Fi</td>
</tr>
<tr>
<td>Renesas CK-RX65N</td>
<td>RTK5CK65N0S04000BE</td>
<td>✓</td>
<td>CY22 Q4</td>
<td>Cat-M1, Ether</td>
</tr>
</tbody>
</table>

### Tools

<table>
<thead>
<tr>
<th>Tool Name</th>
<th>Category</th>
<th>Feature Description</th>
</tr>
</thead>
</table>
| e² studio | Integrated Development Environment | - Easy create or import FreeRTOS and Azure RTOS projects as a new project
- Automatically set clock & PIN functions according to the board and MCU
- Simply set peripheral functions based on GUI by Smart Configurator |
| QE for OTA | Cloud Assist Tool | - Smoothly integrate complicated cloud registration and OTA execution by following the GUI guide |

### Application Note

- Renesas MCU Firmware Update Design Policy
- How to implement FreeRTOS OTA using Amazon Web Services on RX65N
- CK-RX65N SIM activation, Creating the trial account and using Dashboard Getting Started Guide
- RX65N Sample Code for OTA Update of Secondary Device with Amazon Web Services Using FreeRTOS
- RX72N Envision Kit Using Quick-Connect IoT to Send Sensor Information to Amazon Web Services
- Low Power Consumption (Intermittent Operation) using LTE Cat-M1 Module (RYZ014A) and FreeRTOS

### Solution Configuration

- You can easily build an IoT development environment by using the RX Cloud Solution.

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For the latest information is Renesas RX Cloud

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