RX65N, RX651 GROUP
The Mainstream of the Next Generation RX
THE MAINSTREAM OF THE NEXT GENERATION RX
WITH RXV2 CORE, LARGE RAM AND ENHANCED CONNECTIVITY

- 120 MHz/15 mA MCU with higher performance and lower power consumption
  RXv2 core using new process, achieves operation at 120 MHz/15 mA (Typ), with 1.5 times higher operational performance than and appx. 5 times higher power efficiency than competing MCUs!!
  RX65N/RX651 support devices that require higher performance with lower power consumption

- Enhanced connectivity in peripheral functions with RX63N/RX631
  Equipped with SD host/slave interface for growing demand of network. SD connection compliant wireless LAN support is now available. Also additional enhanced functions of RX63x such as serial communication with FIFO, higher-speed Quad SPI communication, and larger RAM of 256 kB etc., to meet customers demands!!

- Easy to migrate with compatibility in pin assignments and FIT support drivers
  Full compatibility with pin assignments between RX63N/RX631, RX64M/RX71M enables easy migration. FIT support drives and middleware with RX63N/RX631, RX64M/RX71M are also available for RX65N/RX651!!

HIGH COMPATIBILITY BETWEEN RX600 SERIES IN PIN ASSIGNMENTS AND FUNCTIONS

- High compatibility in pin assignments to provide an easy update/optimize path
- Migration APN (application notes) is also available
RX65N/RX651 vs. COMPETING MCUs

More advanced operation capacity than competing MCUs

<table>
<thead>
<tr>
<th>Product</th>
<th>CoreMark</th>
</tr>
</thead>
<tbody>
<tr>
<td>RX64M</td>
<td>546</td>
</tr>
<tr>
<td>RX65N / RX651</td>
<td>516</td>
</tr>
</tbody>
</table>

With significantly higher power efficiency

<table>
<thead>
<tr>
<th>Product</th>
<th>CoreMark /mA</th>
</tr>
</thead>
<tbody>
<tr>
<td>RX64M</td>
<td>26</td>
</tr>
<tr>
<td>RX65N / RX651</td>
<td>34</td>
</tr>
</tbody>
</table>

*Based on normal values from EEMBC

**Calculation based on coremark value and type current on datasheet

RX65N/RX651 GROUP MEMORY/PACKAGE LINE-UP

<table>
<thead>
<tr>
<th>Flash RAM E2 Data Flash</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSF565Nxxxxx RSF5651xxxxx</td>
</tr>
</tbody>
</table>

NOTABLE FUNCTIONS

- **New!**
  - RXv2 core

- Enhanced motor control

- 12-bit A/D

- MTU3

- **Enhanced communication**
  - AES / RNG
  - HD with AES, RNG enables high-speed encryption with small memory

- SRAM 256 kB

- SD slave interface

- SCI w/ FIFO

- Quad SPI

- Enhanced memory

- SD host interface

- Communication I/F of RX63x generation, added with SD host/slave interface. Available for SD connected wireless module and storage

- Built-in RAM enhanced to 512 kB. Built-in flash 512 kB product with larger RAM capacity

Application examples:
- Industrial system controller
- HVA controller
- Industrial inverter control
- Communication unit for smart meter
- System controller for printer
- etc.