Nessum Communication IC: SC1320A
- Enables IoT applications over short range wireless and existing wired infrastructure-

Nessum* is the latest solution for IoT communications. For wired communication, Nessum leverages the installed infrastructure through its support for various types of cables, such as powerline, coaxial, flat and twisted pair; Nessum can also achieve short range wireless data transmission either in air or water. Nessum features reliable data transmission and intelligent device management for smart city, residential, commercial and industrial applications. The SC1320A IC applies Nessum technologies to enable IoT applications efficiently and cost-effectively.

*“nessum” and its logo is a registered trademark or a pending trademark application of Panasonic Holdings Corporation in Japan and in other countries

■ Features

- Embedded Nessum core conforms to IEEE 1901-2020
- Multihop is supported for extended distance
- Easy applicable for IoT devices since TCP/IP software stack is included and general interfaces such as UART/SPI are implemented.
- Use of advanced manufacturing process leads to a compact package size.
- With a compact power circuit design, the PCB design and BOM costs can be optimized.
- Stable powerline communication is achieved by the combination of high-quality analog and noise reduction techniques.
- Low power consumption through proprietary technology.
## Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>Arm® Cortex®-M series</td>
</tr>
<tr>
<td>System Clock</td>
<td>125MHz</td>
</tr>
<tr>
<td>Flash</td>
<td>Quad-SPI</td>
</tr>
<tr>
<td>I/F</td>
<td>SPI/ UART/ RMII</td>
</tr>
<tr>
<td>Supply Voltage</td>
<td>3.3V unity</td>
</tr>
<tr>
<td>Package</td>
<td>QFN</td>
</tr>
<tr>
<td>Temperature</td>
<td>-40℃ to 85℃</td>
</tr>
<tr>
<td>Power</td>
<td>200mW (Typ.)</td>
</tr>
</tbody>
</table>

* "Arm" and "Cortex" are trademarks or registered trademarks of Arm Limited (or its subsidiaries) in the EU and/or elsewhere.

## System Structure

### External I/F

Easy applicable for IoT devices since general interfaces like UART/SPI are implemented. The bridge between ethernet MAC (RMII) and Nessum can be used to extend an Ethernet network.

### Nessum Core

By optimizing the IEEE 1901-2020 conforming Nessum core for IoT devices, design area and BOM can be reduced.

### SDK Support

TCP/IP software stack is implemented in addition to the real-time OS. Secure communication such as SSL/TLS is also possible.

### Low Power and High Precision Analog

Optimized analog techniques for consumer devices contributes to noise reduction in the power line. These techniques also contribute to reduce the implementation area and consumption power.

## Solution

### Configuration API

Nessum communication can be established simply by setting the IP via the general I/F such as UART.

### Maintenance I/F

Maintenance can be easily performed with a tablet via Wi-Fi router since a web server is installed.