The new product family builds upon the successes of Renesas’ SmartBond line, boasting a 160-MHz Arm® Cortex®-M33F application processor, 2D Graphics processor, Arm Cortex-M0+ sensor node controller, Voice Activity Detector (VAD) and Power Management Unit (PMU) integrated into a single die. With its combination of ultra-low-power radio transceiver and software-configurable and upgradeable protocol engine (MAC), the DA1470x family is capable of supporting Bluetooth® low energy as well as multiple other 2.4GHz protocols. These unique features make the DA1470x family the first product in the wireless MCU space to offer this level of integration.

**Highly Integrated Advanced Wireless Connectivity MCU**

**SMARTBOND™ DA1470X FAMILY**

**DA1470x and its Quad-Core System**

- Arm Cortex-M33F at 160 MHz as main application core offering processing capabilities up to 240 dMIPS
- 2D GPU core & Display Controller combining ultra-low power capabilities with advanced graphic processing
- Dedicated Arm Cortex-M0+ Sensor Node Controller for best in class power consumption while reading and processing sensor data

**DA1470x has an integrated battery charger and system Power Management Unit (PMU)**

- Integrated 720mA USB charger with power path management supports re-chargeable Li-ion/Li-Po batteries
- Integrated low quiescent current SIMO DCDC (2.9-4.75V) of the PMU efficiently supplies both the internal system as well as external components on the PCB
- Boost DC-DC converter (4.5V – 5V) with 150mA load capabilities

**DA1470x comes with an Ultra-Low power Voice Activity Detector (VAD)**

- System on current <30uA in VAD mode
- 11 ENOB, 16 Ksps Audio ADC with Programmable Gain Amplifier

**Key Features**

- Multi-core system – CM33F as main application core and CM0+ as sensor node controller
- Dedicated 2D GPU & Display controller supporting DPI, JDI parallel, DBI and Single/Dual/Quad SPI interfaces
- Integrated charger and system Power Management Unit (PMU)
- Configurable MAC supporting Bluetooth LE 5.2 and proprietary 2.4 GHz protocols
- State of the art low power Bluetooth LE Radio matched to 50 ohms with a link budget of 103 dB optimizing battery life, system cost and connectivity over the air
- Ultra-low power Voice Activity Detector (VAD)
- Advanced Security with state-of-the-art crypto accelerators, secure boot and key storage and handling
**Key Benefits**

- Deliver on advanced sensor applications with rich graphical interfaces while optimizing battery lifetime
- Integrated PMU & battery charger eliminates the need of external PMIC resulting in significant cost savings on the Bill of Materials (BoM)
- Software-upgradeable and configurable MAC ensures future proof Bluetooth LE connectivity
- Integrated VAD enables ultra-low power and always-on audio processing, making keyword detection use cases possible at the edge
- Rich set of digital and analog interfaces enabling endless communication options

**Applications**

- Fitness trackers
- Sports watches
- Medical Devices (e.g. Glucose Monitoring Readers)
- Smart Home Devices and Appliances (e.g. Thermostat, White Goods, etc.)
- Industrial automation and Security Systems (e.g. Mobile POS, HMI terminals, etc.)
- Smart Consoles (e.g. E-bike, Exercise Equipment, Gaming Consoles, etc.)
- Toys

**Software Tools**

The DA1470x family parts are supported by Renesas SmartSnippets™ Studio and Toolbox, a royalty-free software development platform for all SmartBond devices. It contains:

- SmartSnippets Toolbox: A tool suite covering all software development needs, including power profiling, Flash or OTP programming and testing
- SmartSnippets IDE: An Eclipse CDT-based IDE with pre-configured plugins for easy out of the box set-up of the build / debug environment
- SmartSnippets DA1470x Software Development Kit and documentation

**DA1470x Product Family Selector Guide**

<table>
<thead>
<tr>
<th>Features</th>
<th>DA14701</th>
<th>DA14705</th>
<th>DA14706</th>
<th>DA14708</th>
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Ordering Information

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DA1470x Development Kits

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<td>DA14706-00HZDB-P</td>
<td>Bluetooth Low Energy DA14706 daughter board</td>
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<tr>
<td>DA14708-00HZDB-P</td>
<td>Bluetooth Low Energy DA14708 daughter board</td>
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For more information and purchasing please visit; www.renesas.com/DA1470x