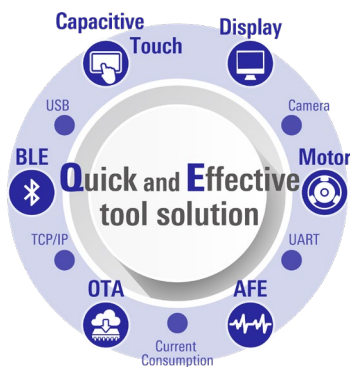Condensed know-how for application development

# QE: Tools for Particular Applications
## Quick and Effective tool solution

https://www.renesas.com/qe

## Applications can be initiated by utilizing know-how and configuring simple settings.



Have you ever wondered "What's the matter with this thing? I understand the development environment, and have pulled the application together, but it still doesn't go!"?

The Renesas QE (Quick and Effective) tool solution goes beyond conventional development tools by providing detailed support for developing various applications.

This solution adds application-specific development know-how (functionality) to an existing integrated development environment with standard debugging functions, thus allowing for easy setting up of an application through simple configuration.

Supported applications are also being expanded according to needs, continuously supporting minimization of labor and development time for our customers.

Easy tuning of touch interface sensitivity
## QE for Capacitive Touch

This is a development assistance tool for developing embedded systems that use capacitive touch sensor units. Sensitivity can be tuned during the operation of the touch interface (results are immediately fed back to the source program). Normally, this requires the following sequence of processes: perform measurement, calculate parameters, modify the parameters in the source program, and build the program. Automating this sequence reduces labor and development times.

Supported MCUs   RA Family / RL78 Family / RX Family

Details   www.renesas.com/qe-capacitive-touch


Collective display of the input states of selected touch interfaces

### e-AI × 3D Gesture Recognition
3D gesture recognition based on e-AI technology supports the development of gesture applications with the use of AI. The recording function, AI generation function, and monitoring & tuning function ease application development.

Supported MCUs   RA Family / RL78 Family / RX Family


3D gesture AI solution

Efficiently configuring motor middleware and drivers through a GUI
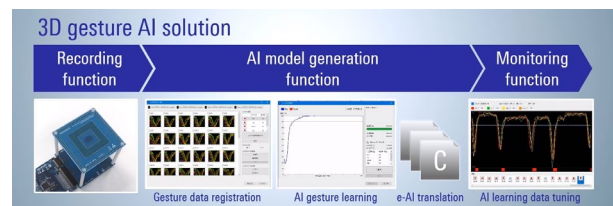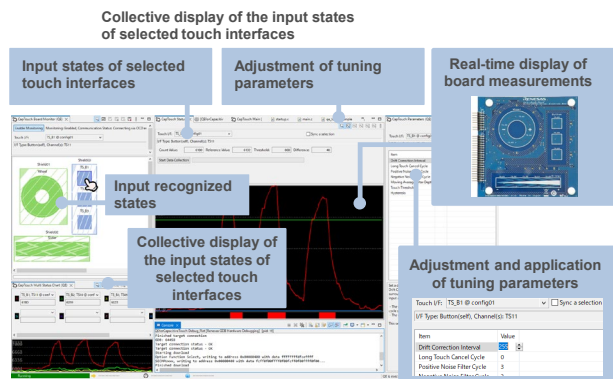## QE for Motor   Details   www.renesas.com/qe-motor

This is a development assistance tool for developing embedded systems that use motors. The tool facilitates the easy configuration of motor middleware and drivers, along with motor tuning and analysis. Configuration of motor middleware and drivers can be easily achieved through block-diagram visualization (simulating the actual hardware configuration).
Renesas Motor Workbench configuration is fully automated, allowing for immediate tuning and analyzing of motors by the press of a button.

Supported MCUs   RA Family / RL78 Family / RX Family

Easily checking AD conversion results on the monitor screen to adjust analog signals without referencing manuals
## QE for AFE   Details   www.renesas.com/qe-afe

This is a development assistance tool for developing embedded systems that handle high-precision sensing by using MCUs that include an analog front end (AFE). The AFE configuration can be set or changed by using a circuit diagram. You can adjust analog signals while viewing the results of AD conversion (waveform and histogram) on the monitor screen without the need for an oscilloscope. Setting an incorrect value prompts an error notification. Items that cannot be set are locked and conflict between pin functions is also checked, thus allowing for signal adjustment without the need to reference manuals.
The stand-alone version of the tool allows for the adjustment of an AFE while viewing the schematics without the need for a program.

Supported MCUs   RA2A1 / RA2A2 / RX23E-B

## Easy settings without the need for hardware manuals

## QE for Display    [Details]    www.renesas.com/qe-display

This application is a development assistance tool intended for the development of embedded systems that use Video Display Controller 5 (VDC5) and the image display function of the Graphic LCD Controller (GLCDC). This tool enables easy adjustment of the initial screen of the display and image quality, achieving reduced development periods.

[Supported MCUs]   RA6M3 / RA8D1 / RZ/A / RX600 / RX700

Linkage to emWin (SEGGER GU I platform) is supported.
This facilitates operations from initial display adjustment to the creation and display of GUI screens.

[Supported MCUs]   RA6M3 / RA8D1 / RX600 / RX700

Linkage to Aeropoint GUI for RX (from CRI Middleware) enables the creation of GUI screens and video/audio playback using PowerPoint.

[Supported MCUs]   RX600 / RX700

Microcontrollers without GLCDC can control an LCD display via a serial connection. The GUI screen creation tool (available when a serial connection is used) is compatible with emWin.

[Supported MCUs]   RX Family
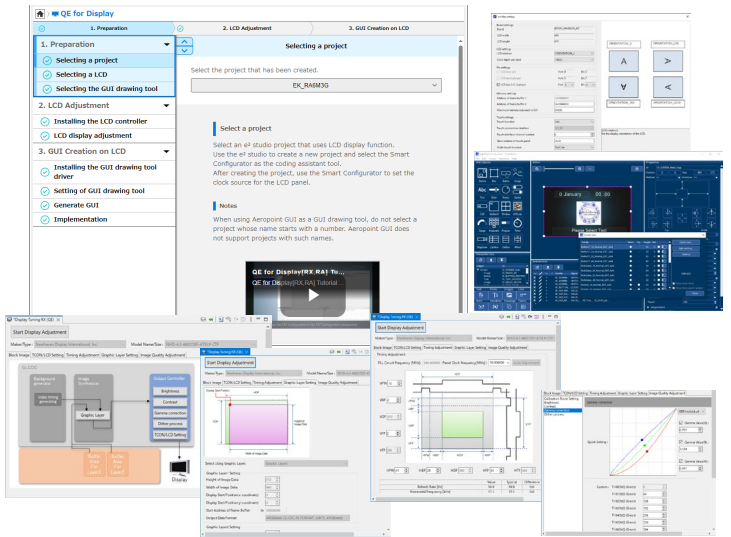
## Easily update software using a cloud service

## QE for OTA    [Details]    www.renesas.com/qe-ota

This is a development assistance tool for cloud applications. It provides total support from cloud service registration to software updating. Only four steps are needed from signing in to a cloud service to updating of software for IoT devices. To use the OTA (Over the Air) technology, many procedures are automated, including registration with the cloud system and installation of security information to the MCU. You can quickly use the OTA technology without special knowledge, thus reducing development time.

[Cloud services and supported MCUs]   Amazon Web Service   RA6M5 / RL78/G23 / RX65N
Microsoft Azure   RX65N
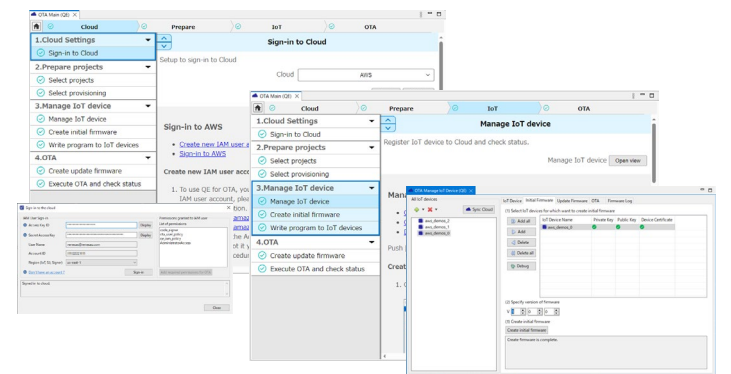
## Easily try out communication via Bluetooth® Low Energy

## QE for BLE    [Details]    www.renesas.com/qe-ble

This application is a tool intended for the development of Bluetooth® Low Energy (BLE) communication system.
This tool can add profiles required for BLE communication and generate code by defining unique profiles.

[Supported MCUs]   RA Family / RX Family

This tool allows you to create a script by using the Bluetooth protocol stack API. You can easily check communication based on the Bluetooth specifications by executing the script. This tool will also help you to understand the basic features of communication.

[Supported MCUs]   RA Family / RX Family

In a system combined with the DA14531 Bluetooth® Low Energy module, you can add and customize a Bluetooth profile.

[Supported MCUs]   RA Family / RL78 Family / RX Family
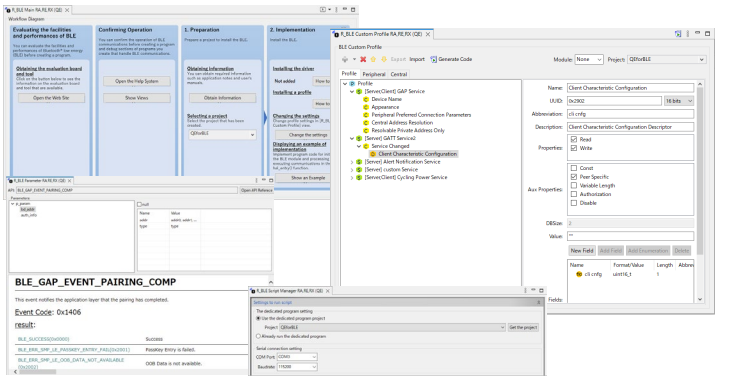
\* Bluetooth is a registered trademark of Bluetooth SIG, Inc. in the United States.

## ☁ Installation

For how to install each QE tool, see the following web page:
**www.renesas.com/software-tool/qe-support**

**❓ FAQ**          en-support.renesas.com/knowledgeBase

**✔ Community**   community.renesas.com

## ▶ Videos

Tutorial videos for microcontrollers are available:

[For RA Family]     www.renesas.com/ra-how-to-video
[For RL78 Family]   www.renesas.com/rl78-how-to-video
[For RX Family]     www.renesas.com/rx-how-to-video

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# renesas.com

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