[Released on the Web]

Solution Toolkit

QE for Motor[RA] V1.0.0:

# **Development Assistance Tool for Motor**

# Outline

QE for Motor[RA] V1.0.0 has been released on the web.

QE for Motor[RA] is an assistance tool for applications that operates under the e2 studio integrated development environment. In the development of an embedded system based on the RA6T2 that incorporates the motor unit, this product supports the configuration of motor middleware and related drivers provided by FSP (Flexible Software Package). Also, QE for Motor[RA] assists tuning and analysis by coordinating Renesas Motor Workbench to support the development of motor software.

This product is available free of charge

## 1. Product Features

The three functions below make it easy to develop software for motors.

#### 1.1 Workflow View

By following to the Workflow Diagram, it is possible to configurate the middleware and related drivers for motor. Also, tuning and analysis can be easily implemented by coordinating Renesas Motor Workbench from the diagram.

Evaluating Renesas Motor Solutions	1. Preparation ⑦ Prepare software for motor control and make tool setting.	2. Tuning (2) Run the tuning program to obtain the motor control parameters.	3. Analyze ⑦ Analyze and monitor the motor system operation.
Obtain More Information Renesas has a diverse portfolio of motor solutions to support a wide range of motor application. Find out more by clicking the button below. Explore	Select Target Project     Select a target project from the     e <sup>3</sup> studio workspace.     RA6T2_MCILV1_SPM_LESS_FOC_E2S_V ♥     Series:   RA6T2     Device:   R7FA6T28D2CFP     Configure Motor Software     Start Configuration     Configure Tool     Open QE Setting	Prepare Tuning Program     Select Tuning Program     Generate Tuning Program     Download Tuning Program     Tuning Program:     Debug#RA6T2_MCILV1_SPM_LESS_FOC_E25_V070.eff     Download     Start Tuner     Select a configuration file for Tuner.     Use Default Configuration(RA6T2_MCILV1_SPM_LES V)     Launch Renesas Motor Workbench for Tuner.     Launch <tuner></tuner>	Build Application Program Build Project Download Application Program Application Program: DebugYRA612_MCLV1_SPM_LESS_FOC_E2S_V070.eff Download Start Analyzer Select a configuration file for Analyzer. RA6T2_MCLV1_SPM_LESS_FOC_E2S_V070.mt V Launch Renesas Motor Workbench for Analyzer. Offine mode Launch <analyzer></analyzer>

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#### 1.2 Motor Configuration GUI

By using motor system configuration diagram with hierarchical structures that synchronize with FSP (Flexible Software Package: a software package for middleware and drivers), you can efficiently configure the middleware and related driver for the motor.



The motor configuration GUI is displayed on [FSP Visualization] view in e2 studio. [FSP Visualization] view is opened in [FSP Configuration] perspective. Also, [FSP Visualization] view can be opened from main menu of e2 studio, [Renesas Views]->[C/C++]->[FSP Visualization].

The motor configuration GUI is displayed when selecting the stack of <u>supported FSP module</u> on the [Stacks] tab in FSP configuration editor.

Stacks Configuration	Generate Project Content	Motor Sensorless Vector Control
Threads ← Meta Thread & Remove ← Web HAL/Common ← Gupor VD Port Driver on r, jo ← Motor sensories vector contr ← g_poeg0 Port Output Enable fo	HAL/Common Stacks Image: Stack > Control   Image: Stack > Stack > Control   Image: Stack > S	Image: Speed of the speed o



### 1.3 Coordination with Renesas Motor Workbench

QE automatically sets the necessary settings for Renesas Motor Workbench, so you can tune and analyze the motor by clicking on [Launch Tuner] and [Launch Analyzer] button in the workflow view.



### 2. Supported Devices

**RA** Family

RA6 Series : RA6T2

### 3. Supported Software

Middleware for motor

- RA Flexible Software Package (FSP)
  - · Motor Sensorless Vector Control: rm\_motor\_sensorless V3.5.0 (or later)
  - · Motor Encoder Vector Control: rm\_motor\_encoder V3.5.0(or later)
  - 120-degree control: rm\_motor\_120\_degree V3.5.0(or later)

#### 4. Operating Environment

- Windows 8.1, and Windows 10 (64bit)
- Renesas e<sup>2</sup> studio 2021-10 (or later)
  - % If you are using a version of the e2 studio earlier than 2021-10, please update it to 2021-10 or later.
- Renesas Motor Workbench V3.0.0(or later)
  - % If you are using a version of the Renesas Motor Workbench earlier than V3.0.0, please update it to V3.0.0 or later.

#### 5. Obtaining the Product

Obtain QE for Motor [RA] V1.0.0 from the following URL:

https://www.renesas.com/qe-motor

For details on how to use this product, refer to the [Help] menu.



#### **Revision History**

		Description	
Rev.	Date	Page	Summary
1.00	Jan.16.22	-	First edition issued

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