[Upgrade to Revision]

## Solution Toolkit

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Development Assistance Tool for Capacitive Touch Sensors

# QE for Capacitive Touch V3.2.0

### Outline

QE for Capacitive Touch, a development assistance tool for capacitive touch sensors, has been updated from V3.1.0 to V3.2.0.

### 1. Description

The following sections cover the main enhancements. For details and how to install the product, see the release note at the link below.

QE for Capacitive Touch V3.2.0 Release Note https://www.renesas.com/document/rln/ge-capacitive-touch-v320-release-note

### 1.1 Addition of Supported Devices

> The following group is now supported.

RL78 Family: RL78/G22 group

### 1.2 Renewal of the Plug-in Edition Main View

To open the main view, select the e<sup>2</sup> studio menu, [Renesas Views], [Renesas QE], and [CapTouch Workflow (QE)]. There are two types of main view.

When the main view is opened for the first time, a detailed guide appears (Figure 1: containing guidance and tutorial videos). When the view is narrowed, a simple guide appears (Figure 2). Changing the width toggles between these view guides.





#### 1.3 Int8-quantization of AI Models Used in 3D Gesture

Calculations in AI models can be int8-quantized, which will help reduce ROM/RAM sizes and improve processing speed.

To enable int8-quantization, select [Start Al Training]. In the [Gesture Training] dialogue box, click [Setting] to open [Training Setting]. In the [Training Setting] dialogue box, click the [Neural Network Setting] tab, and then enable [Size First (Quantized)] in [Neural Network Selection].

	Training Setting		>	×			
	Make settings related to training. Training Data Setting Neural Network Setting						
	Neural Network Selection	on	_				
Enable <sup>¶</sup>	Neural Network Size O Large		Medium	◯ Small			
	Input Frame Size	50	30	30			
	ROM Size (Criterion)	3.91 KB	2.66 KB	0.37 KB			
	RAM Size (Criterion)	2.00 KB	1.22 KB	0.92 KB	added here, use it as a guide for the ROM / RAM size.		
	Accuracy	High	Medium	Low	When quantization is enabled, the computation in the neural network is performed in Int8, which reduces ROM /		
	Option Setting RAM size and improves execution speed.						
	Learning Rate (First Half)			01	However, since a decrease in		
	Learning Rate (Latter Ha		0010	recognition accuracy may occur, please check the accuracy with the generated			
	Batch Size	256		AI. 🗸			
	The Number of Times of	Training (Epocl	h) 200		Restore Default		
					OK Cancel Help	]	

Figure 3: Neural Network Setting (Training Setting dialog box)

When [Size First (Quantized)] is enabled, recognition might be less precise due to int8-quantization of calculations in AI models. Check the precision with the generated AI.

### 2. Operating Environment

e<sup>2</sup> studio Integrated Development Environment 2022-10 or later
For how to use QE for Capacitive Touch, select [Help] in e<sup>2</sup> studio, and then see [QE].

#### 3. Installing the Product

Download the installer for QE for Capacitive Touch V3.2.0 from the link below.

https://www.renesas.com/software-tool/qe-capacitive-touch-development-assistance-tool-capacitive-touch-sensors#tab-release-information



## **Revision History**

		Description		
Rev.	Date	Page	Summary	
1.00	Mar.01.23	-	First edition issued	

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