

[Notes] Solution Toolkit QE for Capacitive Touch Development Assistance Tool for Capacitive Touch Sensors

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Outline

When using the products in the title, note the following points.

1. Notes on using tuning processing via serial communication on CTSU2.

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1.1 Applicable Products

Development Assistance Tool for Capacitive Touch Sensor

- QE for Capacitive Touch V3.1.0

1.2 Applicable Devices

RX Family: RX140

RA Family: RA2E1, RA2L1

RL78 Family: RL78/G23

1.3 Details

The measured "Parasitic Capacitance" value is incorrect when only one configuration (method) is used, and it contains shield pin.

1.4 Conditions

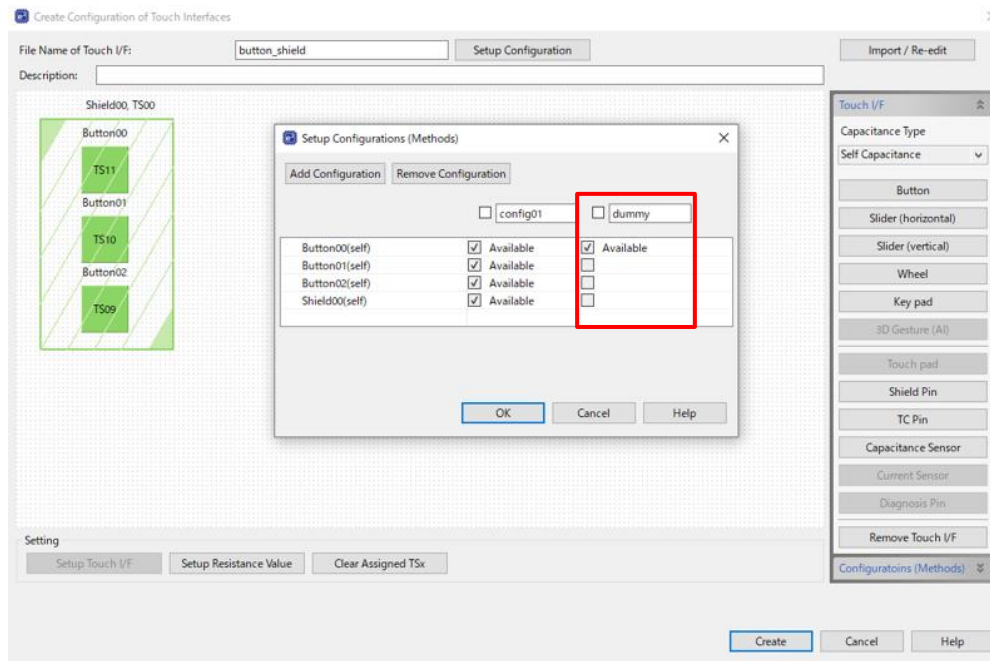
It occurs when the tuning processing via serial communication is used for the corresponding device.

1.5 Workaround

Add a dummy configuration (method) to increase the number of configurations (methods) to two or more.

Example:

1. Add a dummy configuration (method). This configuration (method) does not need to include shield pin.



2. Perform tuning processing via serial communication.
3. Remove code for dummy configuration (method) from sample code of main() function.

```
void qe_touch_main(void)
{
    fsp_err_t err;

    /* Open Touch middleware */
    err = RM_TOUCH_Open(g_qe_touch_instance_config01.p_ctrl, g_qe_touch_instance_config01.p_cfg);
    if (FSP_SUCCESS != err)
    {
        while (true) {}
    }

    err = RM_TOUCH_Open(g_qe_touch_instance_dummy.p_ctrl, g_qe_touch_instance_dummy.p_cfg);
    if (FSP_SUCCESS != err)
    {
        while (true) {}
    }

    /* Main loop */
    while (true)
    {
        /* for [CONFIG01] configuration */
        err = RM_TOUCH_ScanStart(g_qe_touch_instance_config01.p_ctrl);
        if (FSP_SUCCESS != err)
        {
            while (true) {}
        }
        while (0 == g_qe_touch_flag) {}
        g_qe_touch_flag = 0;

        err = RM_TOUCH_DataGet(g_qe_touch_instance_config01.p_ctrl, &button_status, NULL, NULL);
        if (FSP_SUCCESS == err)
        {
            /* TODO: Add your own code here. */
        }

        /* for [DUMMY] configuration */
        err = RM_TOUCH_ScanStart(g_qe_touch_instance_dummy.p_ctrl);
        if (FSP_SUCCESS != err)
        {
            while (true) {}
        }
        while (0 == g_qe_touch_flag) {}
        g_qe_touch_flag = 0;

        err = RM_TOUCH_DataGet(g_qe_touch_instance_dummy.p_ctrl, &button_status, NULL, NULL);
        if (FSP_SUCCESS == err)
        {
            /* TODO: Add your own code here. */
        }

        /* FIXME: Since this is a temporary process, so re-create a waiting process yourself. */
        R_BSP_SoftwareDelay(TOUCH_SCAN_INTERVAL_EXAMPLE, BSP_DELAY_UNITS_MILLISECONDS);
    }
}
```

1.6 Schedule for Fixing the Problem

This problem will be fixed in the next version. (Scheduled to be released in January 2023.)

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	Jun.01.22	-	First edition issued

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