

[Notes]

R20TS0931ES0100

Rev.1.00

Mar. 16, 2023

e² studio Smart Configurator Plug-in, Smart Configurator for RX

Outline

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

1. When using S12AD Continuous Scan Mode component and making configuration for channel AN117 to AN119

1. When using S12AD Continuous Scan Mode component and making configuration for channel AN117 to AN119

1.1 Applicable Products

- e² studio 7.3 (Smart Configurator Plug-in V2.0.0) or later
- Smart Configurator for RX V2.0.0 or later

1.2 Applicable Devices

- RX family: RX651/N

1.3 Details

When using S12AD Continuous Scan Mode component and making configuration for channel AN117, AN118 or AN119 for S12AD1 on the GUI, there are no codes generated for register ADANSA1, ADADS1 and ADSSTRL after clicking the "Generate Code" button.

1.4 Condition

Below are the steps to reproduce the issue:

- (1) Creating Smart configurator project on the affected device (e.g., R5F56514AxFB).
- (2) Add S12AD Continuous Scan Mode component from the software component page.
- (3) Select the AN117 from "Analog input channel setting" group and "Add/Average AD value setting" group as **Figure 1.1**.

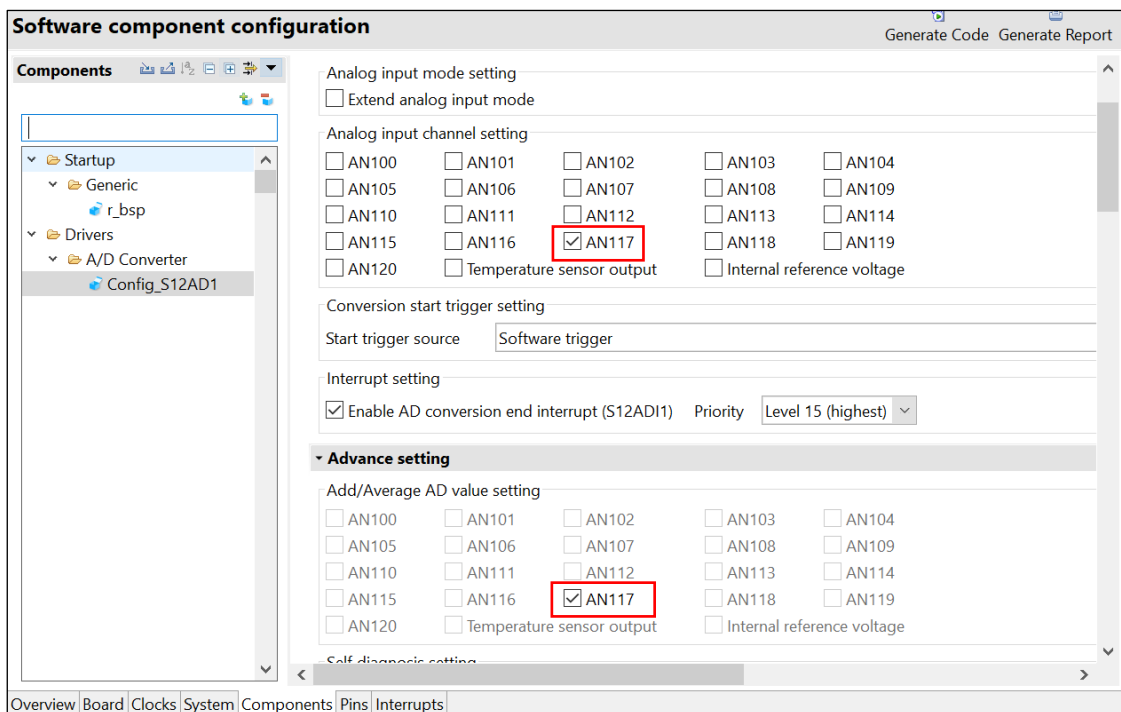


Figure 1.1: Selecting AN107 from S12AD Continuous Scan Mode Component GUI

- (4) Click the "Generate Code" button.
- (5) Open the "Config_S12AD1.c" file to check, no codes for ADANSA1, ADADS1 and ADSSTRL registers are generated out. In fact, the codes displayed in **Figure 1.2** should be generated out.

```
void R_Config_S12AD1_Create(void)
{
    /* Cancel S12AD1 module stop state */
    MSTP(S12AD1) = 0U;

    .....

    S12AD1.ADADC.BYTE = _00_AD_1_TIME_CONVERSION | _00_AD_ADDITION_MODE;

    /* Set channels and sampling time */
    S12AD1.ADANSA1.WORD = _0002_AD_AN117_USED;
    S12AD1.ADADS1.WORD = _0002_AD_AN117_ADD_USED;
    S12AD1.ADSSTRL = _0B_AD1_SAMPLING_STATE_10;

    .....

    R_Config_S12AD0_Create_UserInit();
}
```

Figure 1.2: Codes generated for AN117 channel configuration

1.5 Workaround

The following steps provide an example of how to modify the code generated for the AN110 channel into the code for the AN117 channel. Furthermore, specific tags (Smart Configurator's user code protection feature) will be added to protect the modified code.

("/* Start user code */" and "/* End user code */" are the specific tags of Smart Configurator's user code protection feature, which enables users to add their own user code to any location. The inserted user codes are protected and will be automatically merged into the generated files in the next code generation.)

- (1) Please select any one of the channels from AN100 to AN115 on the GUI, e.g., AN110 as **Figure 1.3**

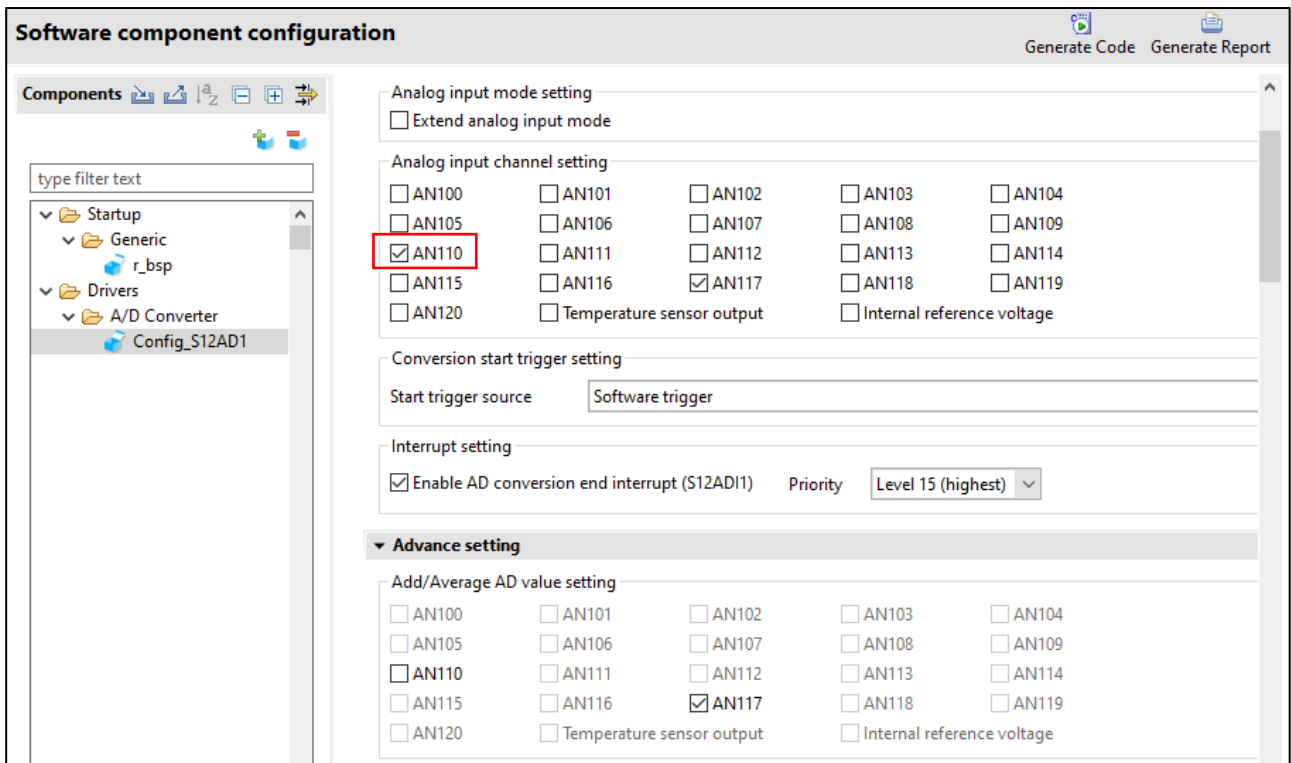


Figure 1.3: Selecting AN110 from S12AD Continuous Scan Mode Component GUI

- (2) Set the sampling time for "AN110" textbox same as "AN116 – AN120" textbox, see **Figure 1.4**, then generate codes.

AN110	0.183	(μs)	(Actual value: 0.183)
AN111	0.183	(μs)	(Actual value: 0.183)
AN112	0.183	(μs)	(Actual value: 0.183)
AN113	0.183	(μs)	(Actual value: 0.183)
AN114	0.183	(μs)	(Actual value: 0.183)
AN115	4	(μs)	(Actual value: 4.000)
AN116-AN120	0.183	(μs)	(Actual value: 0.183)
Temperature sensor output	5	(μs)	(Actual value: 0.000)

Figure 1.4: Sampling time for AN110 and AN116-AN120

- (3) Open the "Config_S12AD.c" file and duplicate the line of code for ADSSTR10 register, and rename the register name to ADSSTR1, move this new line of code after ADADS1 register line code.

- (4) Insert “/* Start user code */” before the ADANSA1 register line of code and add “/* End user code */” after the ADSSTR1 register line code. See **Figure 1.5**

```
void R_Config_S12AD1_Create(void)
{
    /* Cancel S12AD1 module stop state */
    MSTP(S12AD1) = 0U;

    .....

    S12AD1.ADADC.BYTE = _00_AD_1_TIME_CONVERSION | _00_AD_ADDITION_MODE;

    /* Set channels and sampling time */
    S12AD1.ADANSA0.WORD = 0400 AD AN110 USED;
    /* Start user code */
    S12AD1.ADANSA1.WORD = _0002_AD_AN117_USED;
    S12AD1.ADADS1.WORD = _0002_AD_AN117_ADD_USED;
    S12AD1.ADSSTR1 = _0B_AD1_SAMPLING_STATE_10;
    /* End user code */
    S12AD1.ADSSTR10 = _0B_AD1_SAMPLING_STATE_10;
    .....

    R_Config_S12AD0_Create_UserInit();
}
```

Figure 1.5: Codes for AN110 and AN117 configuration for S12AD Continuous Scan Mode Component

- (5) Deselect AN110 from the S12AD Continuous Scan Mode component GUI which is selected from step (1), regenerate codes by clicking the “Generate Code” button, the codes for AN117 configuration are kept and for AN110 are removed. See **Figure 1.6**

```
void R_Config_S12AD1_Create(void)
{
    /* Cancel S12AD1 module stop state */
    MSTP(S12AD1) = 0U;

    .....

    S12AD1.ADADC.BYTE = _00_AD_1_TIME_CONVERSION | _00_AD_ADDITION_MODE;

    /* Set channels and sampling time */

    /* Start user code */
    S12AD1.ADANSA1.WORD = _0002_AD_AN117_USED;
    S12AD1.ADADS1.WORD = _0002_AD_AN117_ADD_USED;
    S12AD1.ADSSTR1 = _0B_AD1_SAMPLING_STATE_10;
    /* End user code */

    .....

    R_Config_S12AD0_Create_UserInit();
}
```

Figure 1.6: Codes for AN117 configuration for S12AD Continuous Scan Mode Component

1.6 Schedule for Fixing the Problem

This problem will be fixed in the following versions.

- e² studio 2023-04
- Smart Configurator for RX V2.17.0 (April 2023)

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	Mar.16. 23	-	First edition issued

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