Smart Configurator for RH850

Outline
When using Smart Configurator for RH850, note the following points.
   1. When using data CRC
   2. When using one-pulse outputs

1. When Using Data CRC

1.1 Applicable Products
   Smart Configurator for RH850 V1.0.0 or later

1.2 Applicable Devices
   RH850 family: RH850/F1KM group
   ➢ RH850/F1KM-S1 group (48-pin, 64-pin, 80-pin, and 100-pin products)
   ➢ RH850/F1KM-S4 group (100-pin, 144-pin, 176-pin, and 233-pin products)

1.3 Details
Because unnecessary initialization code is generated when using the following data CRC function A (DCRA), CRC calculation is not carried out correctly.
   ➢ RH850/F1KM-S1 group: 48-pin and 64-pin products
     DCRA0
   ➢ RH850/F1KM-S1 group: 80-pin and 100-pin products
     DCRA0 to DCRA3
   ➢ RH850/F1KM-S4 group: 100-pin, 144-pin, 176-pin, and 233-pin products
     DCRA0 to DCRA3

When using DCRA unit 0

Add new configuration for selected component

Data CRC

<table>
<thead>
<tr>
<th>Configuration name:</th>
<th>Config_DCRA0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource:</td>
<td>DCRA0</td>
</tr>
</tbody>
</table>
1.4 Workaround

Manually delete the unnecessary initialization code from the generated code in the following source file of data CRC function A(Note):

- Functions in source file "<configuration-name>.c":
  
  “void R_<configuration-name>_Create(void)”

  “void R_<configuration-name>_Input32bitData(const uint32_t * data, uint32_t data_num)”

  “void R_<configuration-name>_Input16bitData(const uint16_t * data, uint32_t data_num)”

  “void R_<configuration-name>_Input8bitData(const uint8_t * data, uint32_t data_num)”

Note: If code is generated again, the previous state is restored. Modification is necessary each time you perform code generation.
The following is an example of the required modification when `<configuration-name>` is `Config_DCRA\text{n}` in the RH850/F1KM group. Delete the unnecessary initialization code shown in red.

Details of modification

```c
void R_Config_DCRA\text{n}_Create(void)
{
    ...
    DCRA\text{n}.CIN = _DCRA_CLEAR_DATA;
    /* Synchronization processing */
    ...
}

void R_Config_DCRA\text{n}_Input32bitData(const uint32_t * data, uint32_t data_num)
{
    ...
    DCRA\text{n}.CIN = _DCRA_CLEAR_DATA;

    for(i=0; i<data_num; i++)
        ...
}

void R_Config_DCRA\text{n}_Input16bitData(const uint16_t * data, uint32_t data_num)
{
    ...
    DCRA\text{n}.CIN = _DCRA_CLEAR_DATA;

    for(i=0; i<data_num; i++)
        ...
}

void R_Config_DCRA\text{n}_Input8bitData(const uint8_t * data, uint32_t data_num)
{
    ...
    DCRA\text{n}.CIN = _DCRA_CLEAR_DATA;

    for(i=0; i<data_num; i++)
        ...
}
```

\(n = \text{unit number}\)
1.5 Schedule for Fixing the Problem

This problem will be fixed in the next version. (Scheduled to be released in January 2020.)
2. When Using One-Pulse Outputs

2.1 Applicable Products
Smart Configurator for RH850 V1.0.0 or later

2.2 Applicable Devices
RH850 family: RH850/F1KM group
➢ RH850/F1KM-S1 group (48-pin, 64-pin, 80-pin, and 100-pin products)
➢ RH850/F1KM-S4 group (100-pin, 144-pin, 176-pin, and 233-pin products)

2.3 Details
Because interval timer mode is set in the TAUB\(n\) channel mode OS register (TAUB\(n\)CMOR\(m\))(Note) and TAUD\(n\) channel mode OS register (TAUD\(n\)CMOR\(m\))(Note) when using one-pulse outputs in the following timer array units, Smart Configurator does not operate properly.

Note: \(n\) = unit number, \(m\) = channel number

➢ RH850/F1KM-S1 group: 48-pin and 64-pin products
  TAUD0
➢ RH850/F1KM-S1 group: 80-pin and 100-pin products
  TAUB0 and TAUD0
➢ RH850/F1KM-S4 group: 100-pin and 144-pin products
  TAUB0 and TAUD0
➢ RH850/F1KM-S4 group: 176-pin and 233-pin products
  TAUB0, TAUB1, and TAUD0

◼ When using one-pulse outputs of channel 0 of TAUB0

![Image of Smart Configurator interface](image)
2.4 Workaround

Manually modify the generated code in the following source file for one-pulse outputs(Note):

Note: If code is generated again, the previous state is restored. Modification is necessary each time you perform code generation.

➢ For TAUBn:

Function in source file "<configuration-name>.c":

“void R_<configuration-name>_Create(void)”

The following is an example of the required modification when <configuration-name> is Config_TAUBn_m in the RH850/F1KM group. The modification is shown in red.

Before modification

```c
void R_Config_TAUBn_m_Create(void)
{
  ...
  /* Set channel m setting */
  TAUBn.CMORm = ... | _TAUB_INTERVAL_TIMER_MODE | ...;
  ...
}
```

$n = \text{unit number}, \ m = \text{channel number}$

After modification

```c
void R_Config_TAUBn_m_Create(void)
{
  ...
  /* Set channel m setting */
  TAUBn.CMORm = ... | _TAUB_PULSE_ONECOUNT_MODE | ...;
  ...
}
```

$n = \text{unit number}, \ m = \text{channel number}$
For TAUDn:

Function in source file “<configuration-name>.c”:
“void R_<configuration-name>_Create(void)”

The following is an example of the required modification when <configuration-name> is Config_TAUDn_m in the RH850/F1KM group. The modification is shown in red.

Before modification

```c
void R_Config_TAUDn_m_Create(void)
{
    ...
    /* Set channel m setting */
    TAUDn.CMORm = ... | _TAUD_INTERVAL_TIMER_MODE | ...;
    ...
}
```

After modification

```c
void R_Config_TAUDn_m_Create(void)
{
    ...
    /* Set channel m setting */
    TAUDn.CMORm = ... | _TAUD_PULSE_ONECOUNT_MODE | ...;
    ...
}
```

2.5 Schedule for Fixing the Problem
This problem will be fixed in the next version. (Scheduled to be released in January 2020.)
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