



# MT793X IoT SDK for TRNG User Guide

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**MT793X IoT SDK for  
TRNG User Guide****Version History**

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Version	Date	Description
1.0	2021-07-29	Official release

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# 1 Getting Started

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This chapter introduces the TRNG (True Random Number Generator) feature and gives you an idea of what you need to prepare to get started.

## 1.1 Overview

Support true random number generation

## 1.2 Code Layout

driver\chip\mt7933\src\hal\_trng.c  
driver\chip\inc\hal\_trng.h

## 1.3 TRNG APIs

### - hal\_trng\_status\_t hal\_trng\_init(void)

/\*\*

\* @brief This function initializes the TRNG hardware clock.

\* @return Indicates whether this function call is successful or not.

\* If the return value is #HAL\_TRNG\_STATUS\_OK, the operation completes successfully.

\*/

### - hal\_trng\_status\_t hal\_trng\_deinit(void)

/\*\*

\* @brief This function de-initializes the TRNG hardware clock.

\* @return Indicates whether this function call is successful or not.

\* If the return value is #HAL\_TRNG\_STATUS\_OK, the operation completes successfully.

\*/

### - hal\_trng\_status\_t hal\_trng\_get\_generated\_random\_number(uint32\_t \*random\_number)

/\*\*

\* @brief This function gets the random number generated by the TRNG.

\* @param[out] random\_number is the TRNG hardware generated random number.

\* @return Indicates whether this function call is successful or not.

\* If the return value is #HAL\_TRNG\_STATUS\_OK, the operation completes successfully.

\*/

## 2 TRNG Sample Use Cases

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Trigger TRNG to generate a random number.

- \* - Step1: Call `hal_trng_init()` to initialize the TRNG clock.
  - \* - Step2: Call `hal_trng_get_generated_random_number()` to generate random number.
  - \* - Step3: Call `hal_trng_deinit()` to de-initialize the TRNG.
  - \* - Sample code:
- ```
* @code
*     uint32_t random_number;
*
*     //Initializes the TRNG source clock.
*     if(HAL_TRNG_STATUS_OK != hal_trng_init()) {
*         //error handle
*     }
*     //Gets the random number.
*     if(HAL_TRNG_STATUS_OK != hal_trng_get_generated_random_number(&random_number)) {
*         //error handle
*     }
*     // random_number is ready to use.
*     hal_trng_deinit(); // Deinitializes the TRNG.
```

**MT793X IoT SDK for  
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