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# Bluetooth Low Energy MCU

## Public BD Address writing tool

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### Introduction

This application note describes public address modification tool for Bluetooth® 5.0 (Core Specification v5.0) RF transceiver.

### Target Device

RA4W1 group

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## 1. Introduction

This application note describes public BD address modification by using specific tool for RA4W1.

### 1.1 Related documents

The following documents are related to this application note. Also refer to these documents when using this application note.

- Host Controller Interface Firmware (R01AN5429)

## 2. How to use Public BD Address modification tool

This section describes usage of public BD address modification tool for RA4W1.

### 2.1 Required Software

Required software is following.

- UART-HCI mode firmware  
Download a “Host Controller Interface Firmware” (R01AN5429) from Renesas website. Build and program the firmware to RA4W1.
- BDAAddrWriter.exe  
This software is included in this document (.bin/ BDAAddrWriter.exe).

### 2.2 Usage of BDAAddrWriter.exe

“BDAAddrWriter.exe” is Public BD address writing tool (BDAAddrWriter.exe) for RA4W1 device.

Note: “BDAAddrWriter.exe” does not support Random BD address writing.

The procedure for writing Public BD address using “BDAAddrWriter.exe” tool is shown below.

1. Select COM port connected to RA4W1.
2. Set UART baud rate. If it is not in the list, input value manually.

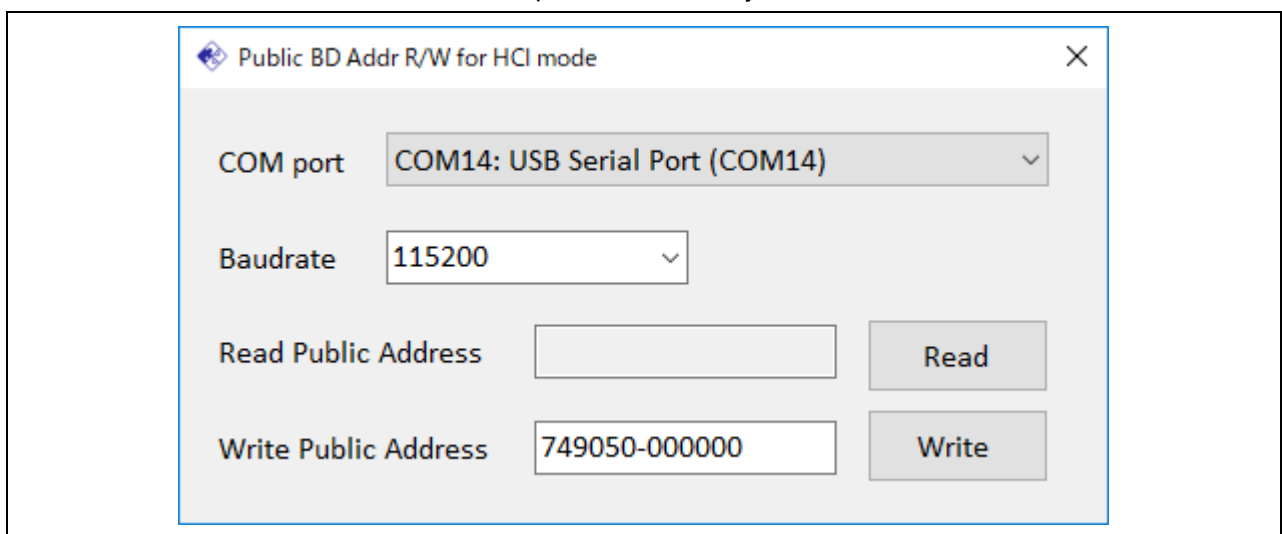


Figure 1 Select COM port and baudrate

- 3. Input Public BD address you want to write in text box. Input 12 digits (6 bytes) of hexadecimal character string (0-9, a-f, A-Z) to need. Discards non-hexadecimal character strings when writing.

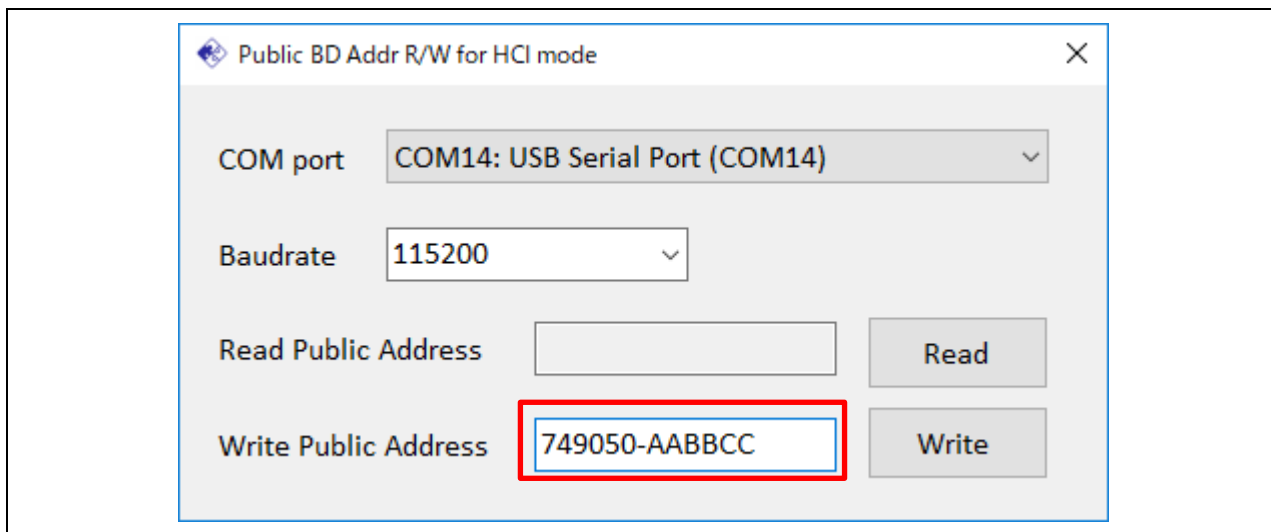


Figure 2 Input Public BD Address

- 4. Click [Write] button.
- 5. If writing is successful, the message box "Success!!" is displayed. Public BD address written by reboot RA4W1 device once is adopt.

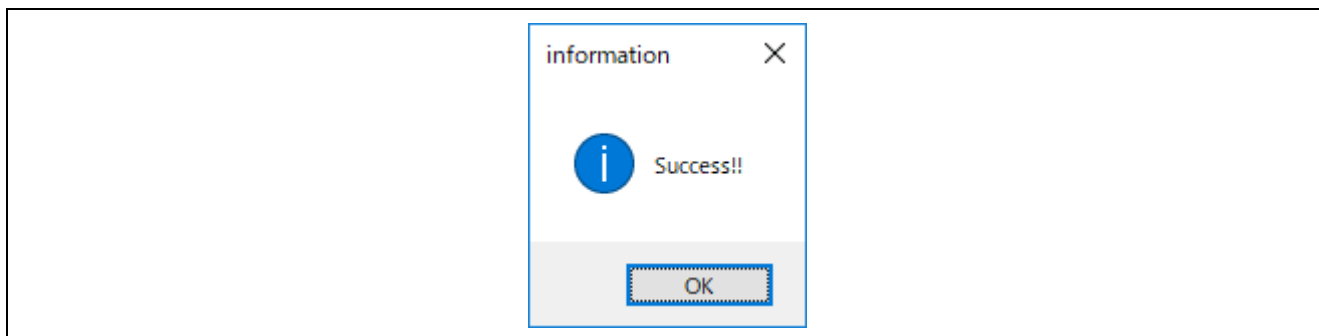


Figure 3 Public BD Address writing success

**Revision History**

Rev.	Date	Description	
		Page	Summary
1.00	07.May.2020	—	Initial release

## General Precautions in the Handling of Microprocessing Unit and Microcontroller Unit Products

The following usage notes are applicable to all Microprocessing unit and Microcontroller unit products from Renesas. For detailed usage notes on the products covered by this document, refer to the relevant sections of the document as well as any technical updates that have been issued for the products.

### 1. Precaution against Electrostatic Discharge (ESD)

A strong electrical field, when exposed to a CMOS device, can cause destruction of the gate oxide and ultimately degrade the device operation. Steps must be taken to stop the generation of static electricity as much as possible, and quickly dissipate it when it occurs. Environmental control must be adequate. When it is dry, a humidifier should be used. This is recommended to avoid using insulators that can easily build up static electricity.

Semiconductor devices must be stored and transported in an anti-static container, static shielding bag or conductive material. All test and measurement tools including work benches and floors must be grounded. The operator must also be grounded using a wrist strap. Semiconductor devices must not be touched with bare hands. Similar precautions must be taken for printed circuit boards with mounted semiconductor devices.

### 2. Processing at power-on

The state of the product is undefined at the time when power is supplied. The states of internal circuits in the LSI are indeterminate and the states of register settings and pins are undefined at the time when power is supplied. In a finished product where the reset signal is applied to the external reset pin, the states of pins are not guaranteed from the time when power is supplied until the reset process is completed. In a similar way, the states of pins in a product that is reset by an on-chip power-on reset function are not guaranteed from the time when power is supplied until the power reaches the level at which resetting is specified.

### 3. Input of signal during power-off state

Do not input signals or an I/O pull-up power supply while the device is powered off. The current injection that results from input of such a signal or I/O pull-up power supply may cause malfunction and the abnormal current that passes in the device at this time may cause degradation of internal elements. Follow the guideline for input signal during power-off state as described in your product documentation.

### 4. Handling of unused pins

Handle unused pins in accordance with the directions given under handling of unused pins in the manual. The input pins of CMOS products are generally in the high-impedance state. In operation with an unused pin in the open-circuit state, extra electromagnetic noise is induced in the vicinity of the LSI, an associated shoot-through current flows internally, and malfunctions occur due to the false recognition of the pin state as an input signal become possible.

### 5. Clock signals

After applying a reset, only release the reset line after the operating clock signal becomes stable. When switching the clock signal during program execution, wait until the target clock signal is stabilized. When the clock signal is generated with an external resonator or from an external oscillator during a reset, ensure that the reset line is only released after full stabilization of the clock signal. Additionally, when switching to a clock signal produced with an external resonator or by an external oscillator while program execution is in progress, wait until the target clock signal is stable.

### 6. Voltage application waveform at input pin

Waveform distortion due to input noise or a reflected wave may cause malfunction. If the input of the CMOS device stays in the area between  $V_{IL}$  (Max.) and  $V_{IH}$  (Min.) due to noise, for example, the device may malfunction. Take care to prevent chattering noise from entering the device when the input level is fixed, and also in the transition period when the input level passes through the area between  $V_{IL}$  (Max.) and  $V_{IH}$  (Min.).

### 7. Prohibition of access to reserved addresses

Access to reserved addresses is prohibited. The reserved addresses are provided for possible future expansion of functions. Do not access these addresses as the correct operation of the LSI is not guaranteed.

### 8. Differences between products

Before changing from one product to another, for example to a product with a different part number, confirm that the change will not lead to problems. The characteristics of a microprocessing unit or microcontroller unit products in the same group but having a different part number might differ in terms of internal memory capacity, layout pattern, and other factors, which can affect the ranges of electrical characteristics, such as characteristic values, operating margins, immunity to noise, and amount of radiated noise. When changing to a product with a different part number, implement a system-evaluation test for the given product.

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