SESUB-PAN-D14580
Application Note
AN-SP-D14580-005
How to handle BD ADDRESS
Scope of this Application Note

This document describes about how to handle BD ADDRESS of SESUB-PAN-D14580.

Target

The user who want to handle BD ADDRESS in the application software.
Firmware source code

TDK use “prod_test.uvproj” in SDK v3.0.8.

File: DA14580_581_SKD_3.0.8.0.zip

Project: DA14580_581_SDK_3.0.8.0¥DA14580_581_SDK_3.0.8.0¥dk_apps¥keil_projects¥prod_test¥prod_test

This document is based on the SDK version of the time of writing. For latest version of SDK, please refer to Dialog Semiconductor web site:

(Registration required)
http://support.dialog-semiconductor.com/
How to handle TDK BD ADDRESS
TDK write BD ADDRESS in OTP memory of SESUB-PAN-D14580. OTP Address : 0x47FD4 to 0x47FD9

Example
BD ADDRESS : 00.80.98.02.04.13

0x47FD4 = 0x13
0x47FD5 = 0x04
0x47FD6 = 0x02
0x47FD7 = 0x98
0x47FD8 = 0x80
0x47FD9 = 0x00

*Read OTP Memory used SmartSnippets

<table>
<thead>
<tr>
<th>0x47FD4</th>
<th>Device unique ID</th>
<th>Device number (written as a string of bytes, i.e. left-most byte will be burned at 0x7FD4)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>13040298</td>
</tr>
<tr>
<td>0x47FD8</td>
<td>Device unique ID</td>
<td>Device number (written as a string of bytes, i.e. left-most byte will be burned at 0x7FD8)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>80000000</td>
</tr>
</tbody>
</table>
How to handle TDK BD ADDRESS

1. Open prod_test.uvprojx
2. Open “arch_main.c”
3. “arch_main.c” has nvds_read_bdaddr_from_otp(). This function read BD ADDRESS from OTP.
4. You can read TDK BDADDRESS used by nvds_read_bdaddr_from_otp() in your firmware.

```c
#include (BLE_CONNECTION_MAX_USER > 1)

if (BLE_CONNECTION_MAX_USER > 1)
    cs_table[0] = cs_table[0];
#endif //DA14581_

// Initialize random process
srand(1);

// Initialize NVDS module
nvds_init((uint8_t *)NVDS_FLASH_ADDRESS, NVDS_FLASH_SIZE);

// Check and read BDADDR from OTP
nvds_read_bdaddr_from_otp();

#ifndef RADIO_580
    iq_trimm_from_otp();
#endif
```
How to handle Original BD ADDRESS from OTP memory
Write original BD ADDRESS in OTP memory

1. Write original BD ADDRESS in OTP memory.

   example
   BD ADDRESS is written in 0x47FE4 ~ 0x47FE9
   BD ADDRESS : 00.80.98.02.04.14

*Read OTP Memory used SmartSnippets

<table>
<thead>
<tr>
<th>Address</th>
<th>Device unique ID</th>
<th>Device number (written as a string of bytes, i.e. left-most...</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x47FDC</td>
<td></td>
<td></td>
<td>00000000</td>
</tr>
<tr>
<td>0x47FE0</td>
<td></td>
<td></td>
<td>00000000</td>
</tr>
<tr>
<td>0x47FE4</td>
<td></td>
<td></td>
<td>14040298</td>
</tr>
<tr>
<td>0x47FE8</td>
<td></td>
<td></td>
<td>80000000</td>
</tr>
<tr>
<td>0x47FEC</td>
<td></td>
<td></td>
<td>00000000</td>
</tr>
<tr>
<td>0x47FF0</td>
<td></td>
<td></td>
<td>00000000</td>
</tr>
</tbody>
</table>
How to handle Original BD ADDRESS

1. Open prod_test.uvprojx
2. Open “arch_main.c”
3. “arch_main.c” has “nvds_read_bdaddr_from_otp()”.
4. “nvds_read_bdaddr_from_otp()” defined in “nvds.c”.
5. “BDADDR_FROM_OTP” defined 0x7FD4.
6. Change “BDADDR_FROM_OTP” to address of Original BD ADDRESS saved.
How to handle original BD ADDRESS into an external memory

Refer to Dialog application note.

⇒ AN-B-023 DA14580_interfacing_with_external_memory.pdf

9 How to handle the Crystal trimming and Bluetooth address into an external memory

In this chapter, the steps needed to write/read values (non-volatile parameters) into/from an external memory (I2C or SPI) are described. Non-volatile parameters can be for instance Bluetooth address, XTAL trim value. Reading the non-volatile parameters should be defined in the application layer. This is done by calling a specific function to read out the value stored at a specific address. SmartSnippets is equipped with a function to write a non-volatile parameter into external memory. Note that the explanation for an external SPI memory case only is mentioned in the example in the next section. A similar procedure can be used for an external I2C memory.
For more detailed technical information, please visit to Dialog Semiconductor Customer Support web site:

*(Registration required)*

http://support.dialog-semiconductor.com/
Visit TDK Product Center on our web site for more detail.

Support Mail : SESUB_Support@tdk.co.jp