Silicon identification

This errata sheet applies to the following STMicroelectronics BlueNRG-LP devices:

<table>
<thead>
<tr>
<th>Order code</th>
<th>Package</th>
<th>Identification information of the device</th>
<th>Device cut</th>
</tr>
</thead>
<tbody>
<tr>
<td>BlueNRG-345xy</td>
<td>QFN32, QFN48, WLCSP49</td>
<td>0x120</td>
<td>2.0</td>
</tr>
<tr>
<td>BlueNRG-355xy</td>
<td>QFN32, QFN48, WLCSP49</td>
<td>0x120</td>
<td>2.0</td>
</tr>
</tbody>
</table>

1. Value as read from register system controller (SYSCFG) - DIE_ID register (0x40000000)

Note: For each device limitation the following information is provided:

- Description: limitation description
- Impact: limitation impact
- Workaround: possible workaround if any
1 Limitations

1.1 Host wake-up source does not wake the BlueNRG-LP from DEEPSTOP

Description:
The wake-up block of the radio manages a Host wake-up timer in parallel to the Bluetooth® wake-up timer. This timer can be used as an additional slow clock timer available in the SoC to exit the device from a DEEPSTOP without launching any Bluetooth sequence.

Impact: This timer does not raise any wake-up request to the power controller of the device.

Workaround:
1. Use the RTC block to wake up the system
2. A software workaround is provided in the ST BlueNRG-LP SDK (STSW-BNRGLP-DK)

1.2 Unsupported system and Bluetooth LE clock configuration combinations

Description:
The following system and Bluetooth Low Energy (LE) clock configuration combinations are not supported:
1. System_Clock=32 MHz and Ble_Clock=32 MHz
2. System_Clock=16 MHz and Ble_Clock=16 MHz

Impact: A device crash could be observed when using Bluetooth Low Energy applications with host wake-up timer

Workaround: None

1.3 HSE phase noise

Description
HSE phase noise is observed when the high speed external IO current control register is set to value > 4 (max. 0.61 mA/V).

Impact
HSE phase noise is observed.

Workaround
High speed external IO current control register setting to a value < 5 is highly recommended (RCC_RFSWHSECR register, bits GMC[2:0]).

1.4 RTC key lost

Description
RTC loses the keys inserted to unlock the calendar register access when the device goes to deepstop mode, due to PRESETn that should come from rcc_v12o instead of rcc_v12i.

Impact
RTC calendar update functionality is affected when system wakes up from DEEPSTOP mode.

Workaround
1. Rewrite the key in the write protect register (WPR) after a DEEPSTOP

1.5 ADC occasional mode does not work

Description
The occasional mode of the ADC allows catching one sample of the Vbat or the temperature sensor during an analog audio mode or full mode sequence. Since the setup time of the temperature sensor is too high and sampling only the first value provides a wrong value, the measure is good only from the second sample.

Impact
The temperature sensor occasional mode strategy (doing one measure among a continuous flow of measurements on another channel) does not work.

**Workaround:**

Two possible options to insert a temperature measurement among other channel measurements are the following:

1. **Sequence mode with a downsampling ratio =1**
   - The sequence mode can be composed of up to 16 conversions
   - Use the ADC mode in continuous regular sequence mode, with a downsampling ratio =1
   - Program 14 times the channel that has to be continuously converted
   - Program 2 consecutive times, the thermal sensor
   - Read all data on the « DS_DATAOUT_REG » register
   - Discard the first measure of the thermal sensor

2. **Sequence mode with a downsampling ratio different from 1**
   - The sequence mode can be composed of up to 16 conversions
   - Use the ADC mode in continuous regular sequence mode, with a downsampling ratio from 4 to 128 (downsampling ratio =2 is not recommended)
   - Program 15 times the channel that has to be continuously converted
   - Program 1 time, the thermal sensor
   - Read all data on « DS_DATAOUT_REG »
Revision history

### Table 1. Document revision history

<table>
<thead>
<tr>
<th>Date</th>
<th>Version</th>
<th>Changes</th>
</tr>
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<tbody>
<tr>
<td>24-Jul-2020</td>
<td>1</td>
<td>Initial release.</td>
</tr>
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