### Features

- Compliant with the Sigfox™ proprietary protocol
- Bidirectional end devices
- Sigfox Verified™
- RC1 compliant - 868 MHz ISM band - 27 EU countries, Oman, South Africa, Iran, Kenya
- RC2 compliant - 920 MHz ISM band - US, Brazil, Mexico, Canada
- RC3c compliant - 923 MHz ISM band - Japan
- RC4 compliant - 920 MHz ISM band - Colombia, Peru, New Zealand, Australia, Singapore, Taiwan
- End-device personalization and activation on the Sigfox™ network for evaluation
- High resilience to interference through UNB (ultra-narrow band) intrinsic ruggedness and Sigfox™ base station spatial diversity
- Configurable maximum Tx power
- High network capacity through UNB and small radio frames size
- High energy efficiency
- Very long range
- High quality of service
- Easy secure-element integration

### Description

Sigfox™ is a long range wireless area network allowing low-power sensors to benefit from a planetary network, enabling end devices with low BOM cost.

The X-CUBE-SFOX Expansion Package consists of a set of libraries, open routines and application examples for the Murata CMWX1ZZABZ-xxx module acting as an end device. It includes an application running on the low-power wireless B-L072Z-LRWAN1 Discovery kit.

X-CUBE-SFOX running on the CMWX1ZZABZ-xxx is Sigfox™ ready.

Two additional examples are provided in the package. They implement respectively: a Sigfox™ modem controlled via AT commands over a UART interface, and an application sending environmental sensor data to the Sigfox™ network when the user push-button is pressed.
Ordering information

X-CUBE-SFOX is available for free download from the www.st.com website.

Regulatory certifications

The following regulatory RF certifications apply:

- RC1: ETSI EN 300 220
- RC3: ARIB STD-T108

License

X-CUBE-SFOX is delivered under the Mix Ultimate Liberty+OSS+3rd-party V1 license.

The software components provided in this package come with different license schemes as shown in Table 1.

For more details, refer to the license agreement of each component.

<table>
<thead>
<tr>
<th>Software component</th>
<th>Owner</th>
<th>License</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cortex®-M CMSIS</td>
<td>Arm®</td>
<td>Open source BSD</td>
</tr>
<tr>
<td>HAL STM32L0</td>
<td>STMicroelectronics</td>
<td>Open source BSD</td>
</tr>
<tr>
<td>Project examples</td>
<td>STMicroelectronics</td>
<td>Ultimate Liberty (source release)</td>
</tr>
</tbody>
</table>

The X-CUBE-SFOX Expansion Package runs on STM32 32-bit microcontrollers, based on the Arm®(a) Cortex®-M processor.

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*a. Arm is a registered trademark of Arm Limited (or its subsidiaries) in the US and/or elsewhere.*
Revision history

Table 2. Document revision history

<table>
<thead>
<tr>
<th>Date</th>
<th>Revision</th>
<th>Changes</th>
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</thead>
<tbody>
<tr>
<td>19-Jan-2018</td>
<td>1</td>
<td>Initial release.</td>
</tr>
<tr>
<td>27-Apr-2018</td>
<td>2</td>
<td>Added RC3c regional configuration. Updated Features, Description, Regulatory certifications, and software architecture figure.</td>
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