X-CUBE-SFOX

Sigfox™ software expansion for STM32Cube

Data brief

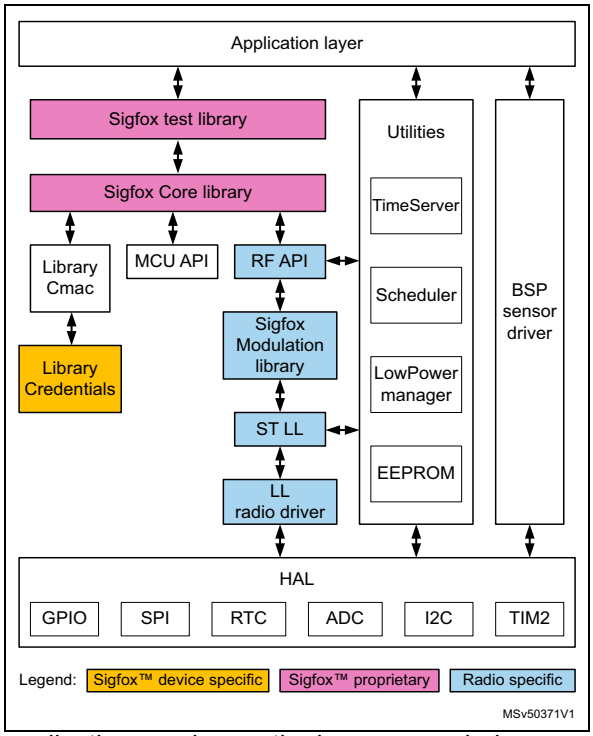
Features

- 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
- RC2: FCC Part 15-247 / ANATEL Resoluçao n°506 / MEX -NOM -121 -SCT1 -2009 / RSS-247
- RC3c: ARIB STD-T108
- RC4: MTIC Resolucion_2544_2009 / Resolucion Ministerial 309-2012 MTC 03 / General User Radio License for Short Range Devices Notice 2016 / AS-NZS 4268:2012 / IMDA TS SRD Issue 1, 1 October 2016 / Low Power 0002 (LP0002) 28 June, 2011 revised

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 1. Software component license agreements

Software component	Owner	License
Cortex®-M CMSIS	Arm®	Open source BSD
HAL STM32L0	STMicroelectronics	Open source BSD
Project examples	STMicroelectronics	Ultimate Liberty (source release)

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

arm

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

Date	Revision	Changes
19-Jan-2018	1	Initial release.
27-Apr-2018	2	Added RC3c regional configuration. Updated *Features*, *Description*, *Regulatory certifications*, and software architecture figure.