

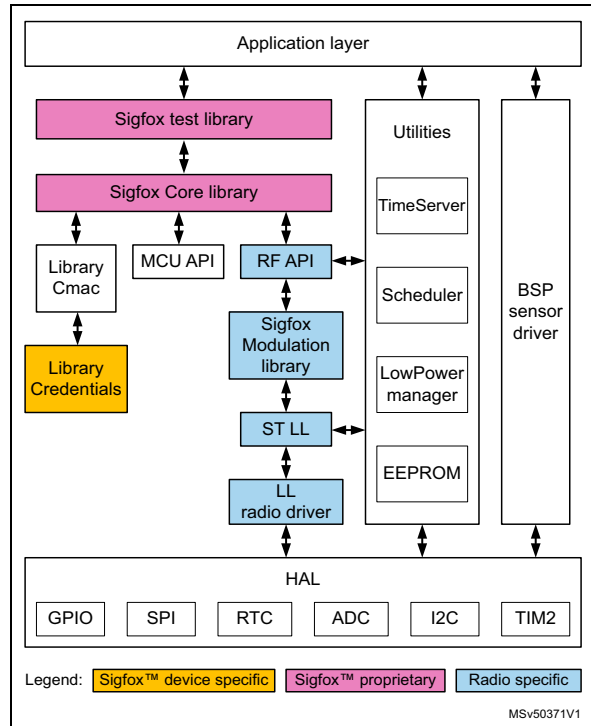
Features

- 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 Resolução 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.



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 <i>Features</i> , <i>Description</i> , <i>Regulatory certifications</i> , and software architecture figure.

IMPORTANT NOTICE – PLEASE READ CAREFULLY

STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST's terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers' products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2018 STMicroelectronics – All rights reserved