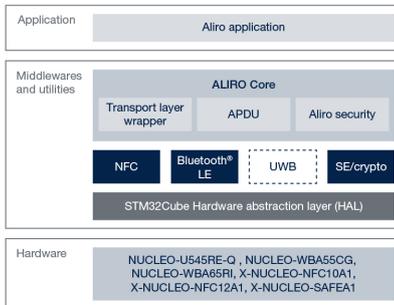


Aliro software expansion for STM32Cube



Features

- Implementation of CSA Aliro 1.0 protocol on compatible STM32 microcontrollers with examples of application for reader device
- Support for NFC, Bluetooth® LE only flow and ready for ultra-wideband integration
- Supported MCU and wireless MCU: STM32U545RE, STM32WBA55CG, STM32WBA65RI
- Certified Bluetooth® LE protocol stack
- Certified NFC Forum type A
- Supported NFC readers: ST25R200, ST25R300
- Sample implementation available on the NUCLEO-U545RE-Q, NUCLEO-WBA55CG, NUCLEO-WBA65RI, X-NUCLEO-NFC10A1, X-NUCLEO-NFC12A1, X-NUCLEO-SAFEA1
- Compatible with CSA certification tool
- Low power capable
- Security component (cryptographic library)
- Ready for integration with X-CUBE-MATTER

Description

X-CUBE-ALIRO is a software package that provides a reference implementation of Aliro technology on compatible STM32 microcontrollers.

It allows fast prototyping of Aliro reader devices using ST development platforms and comes preintegrated with Aliro support, already certified with default features. Refer to ST Aliro [web page](#) for the supported STM32 platforms.

X-CUBE-ALIRO supports multiple communication flows, including NFC only and BLE remote keyless entry (RKE) modes, as well as BLE-based integration with ultra-wideband (UWB) technology. This flexibility allows developers to tailor their solutions to various use cases and device capabilities.

The software package implements all Aliro transaction types, such as standard expedited transactions and fast transactions, which can operate with or without certificate support. Additionally, step-up transactions allow the use of access and revocation documents, enabling the user to handle advanced access control scenarios, using the data elements in the access decision.

X-CUBE-ALIRO also comes with a preintegrated Bluetooth® LE stack and NFC Forum Type A drivers, streamlining development and reducing integration effort. This ensures compatibility with industry standards and accelerates time-to-market for Aliro-enabled applications.

X-CUBE-ALIRO is compliant with the CSA Aliro specification, ensuring that it meets the technical and interoperability requirements defined by the standard. This compliance allows reliable performance and secure communication across certified devices.

X-CUBE-ALIRO helps to pass the tests against the CSA certification tool.

X-CUBE-ALIRO has been validated for interoperability with major smartphone brands, making it compatible with a wide range of user devices commonly available on the market. This ensures a seamless user experience and simplifies integration into commercial applications.

Product summary	
Aliro software expansion for STM32Cube	X-CUBE-ALIRO
STM32 Nucleo-64 development board with STM32U545RE MCU, SMPS, supports Arduino and morpho connectivity	NUCLEO-U545RE-Q
STM32 Nucleo-64 development board with STM32WBA55CG MCU, supports Arduino, ST morpho connectivity	NUCLEO-WBA55CG
STM32 Nucleo-64 development board with STM32WBA65RI MCU, SMPS, supports Arduino	NUCLEO-WBA65RI
NFC card reader expansion board based on ST25R200/ST25R300 for STM32 Nucleos	X-NUCLEO-NFC10A1/X-NUCLEO-NFC12A1
Secure element expansion board based on STSAFE-A110	X-NUCLEO-SAFEA1A
Applications	IoT for smart industry

Revision history

Table 1. Document revision history

Date	Revision	Changes
20-Feb-2026	1	Initial release.

IMPORTANT NOTICE – 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.

In the event of any conflict between the provisions of this document and the provisions of any contractual arrangement in force between the purchasers and ST, the provisions of such contractual arrangement shall prevail.

The 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 acknowledgment.

The 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 the 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.

If the purchasers identify an ST product that meets their functional and performance requirements but that is not designated for the purchasers’ market segment, the purchasers shall contact ST for more information.

ST and the ST logo are trademarks of ST. For additional information about ST trademarks, refer to www.st.com/trademarks. 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.

© 2026 STMicroelectronics – All rights reserved