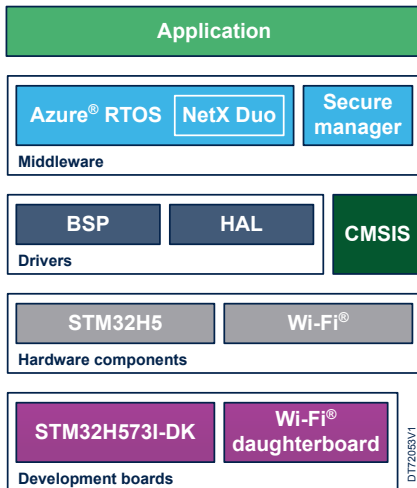


STM32H5 Microsoft® Azure® IoT software expansion for STM32Cube



Features

- Ready-to-run firmware example using Ethernet and Wi-Fi® connectivity to support quick evaluation and development of Microsoft® Azure® cloud-connected applications based on STM32H5 series microcontrollers
- Azure® RTOS port to the STM32H573I-DK Discovery kit
- Azure® RTOS NetX Duo network stack support for Ethernet and Wi-Fi® on STM32H573I-DK
- TLS encryption
- Azure® IoT Central
- Azure® Device Provisioning Service (DPS)
- Azure® Device Update support
- Azure® plug and play
- Azure® X.509 certificate attestation
- STM32Trust TEE secure manager access kit (SMAK) for the STM32H573xx microcontrollers (X-CUBE-SEC-M-H5 variant of STM32TRUSTEE-SM)
- Arm® TrustZone®
- Wi-Fi® and Azure® connection credentials stored in the secure manager protected storage
- Prebuilt binaries for quick connect

| |
|----------------------------|
| Product status link |
| X-CUBE-AZURE-H5 |

Description

The X-CUBE-AZURE-H5 Expansion Package consists of a set of libraries and application examples for STM32H5 series microcontrollers acting as end devices.

X-CUBE-AZURE-H5 provides a port of Azure® RTOS to the supported boards.

X-CUBE-AZURE-H5 runs on the STM32H573I-DK board, which supports Ethernet and optional Wi-Fi® connectivity.

A sample application configures the network connectivity parameters, and illustrates the various ways for a device to interact with the Microsoft® Azure® IoT Hub. The application shows how a client application connects to the Azure® IoT Hub to publish device state and telemetry data, and receive device configuration from the cloud. The application handles Azure® messages, methods, and twin update commands. This allows, from Azure® IoT Central, the reception of telemetry data, the start-and-stop of telemetry data emission, the remote control of the user LED state, and the change of the telemetry interval.

The secure manager is used for the storage of cryptography functions, secure keys, and parameters.



1 General information

The X-CUBE-AZURE-H5 Expansion Package is demonstrated on an STM32H5 32-bit microcontroller based on the Arm® Cortex®-M33 processor with Arm® TrustZone®.

Note: Arm and TrustZone are registered trademarks of Arm Limited (or its subsidiaries) in the US and/or elsewhere.



1.1 Ordering information

X-CUBE-AZURE-H5 is available for free download from the www.st.com website.

1.2 What is STM32Cube?

STM32Cube is an STMicroelectronics original initiative to improve designer productivity significantly by reducing development effort, time, and cost. STM32Cube covers the whole STM32 portfolio.

STM32Cube includes:

- A set of user-friendly software development tools to cover project development from conception to realization, among which are:
 - STM32CubeMX, a graphical software configuration tool that allows the automatic generation of C initialization code using graphical wizards
 - STM32CubeIDE, an all-in-one development tool with peripheral configuration, code generation, code compilation, and debug features
 - STM32CubeCLT, an all-in-one command-line development toolset with code compilation, board programming, and debug features
 - STM32CubeProgrammer (STM32CubeProg), a programming tool available in graphical and command-line versions
 - STM32CubeMonitor (STM32CubeMonitor, STM32CubeMonPwr, STM32CubeMonRF, STM32CubeMonUCPD), powerful monitoring tools to fine-tune the behavior and performance of STM32 applications in real time
- STM32Cube MCU and MPU Packages, comprehensive embedded-software platforms specific to each microcontroller and microprocessor series (such as STM32CubeH5 for the STM32H5 series), which include:
 - STM32Cube hardware abstraction layer (HAL), ensuring maximized portability across the STM32 portfolio
 - STM32Cube low-layer APIs, ensuring the best performance and footprints with a high degree of user control over hardware
 - A consistent set of middleware components such as ThreadX, FileX / LevelX, NetX Duo, USBX, USB-PD, mbed-crypto, secure manager API, MCUboot, and OpenBL
 - All embedded software utilities with full sets of peripheral and applicative examples
- STM32Cube Expansion Packages, which contain embedded software components that complement the functionalities of the STM32Cube MCU and MPU Packages with:
 - Middleware extensions and applicative layers
 - Examples running on some specific STMicroelectronics development boards



2 License

X-CUBE-AZURE-H5 is delivered under the [SLA0048](#) software license agreement and its Additional License Terms.

Revision history

Table 1. Document revision history

| Date | Revision | Changes |
|-------------|----------|------------------|
| 31-Aug-2023 | 1 | Initial release. |

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