Make LoRa® easy and secure
Get ready for the largest IoT development ecosystem

700+ possible combinations of STM32 MCUs and SX127x radios

THE BRAIN
Choose from basic, ultra-low-power or high-performance with STM32 (32-bit) MCUs. Pick from a portfolio that offers from 8 Kbytes up to 2 Mbytes of Flash memory with 14 up to 216 pins with tiny form factor packages, and a rich set of analog and connectivity peripherals.

COMMUNICATION
Choose most appropriate LoRa® transceiver which best matches your application needs. Add short range connectivity with NFC and Bluetooth.

SECURITY
STSAFE-A is a turnkey solution for the IoT. Working in conjunction with the main MCU, it provides state-of-the-art security for LoRa® networks, relying on CC EAL5+ hardware, the STSAFE-A allows easy integration using libraries compatible with standard MCUs.

SENSING
Add sensing capabilities to your application with environmental, motion and proximity sensors.

STSAFE-A – The optimized secure element for device protection in Internet of Things environments

Running on a Common Criteria EAL5+ HW platform, STSAFE-A is a highly secure authentication solution whose security is certified by independent parties. Its command set is tailored to address strong authentication, establish a secure channel in the scope of a TLS session, verify digital signatures, and offer secure storage as well as manage counters for usage monitoring.

It is particularly well suited for applications heavily exposed to fraud and counterfeiting attacks, such as printers, game controllers, phone accessories, and Internet of Things networks and devices.

It offers a complete secure solution ranging from an internally-developed secure operating system embedded on a secure microcontroller, example code for integrating solutions in the applicative environment, and personalization services for storing confidential customer data. ST offers seamless integration of security measures for customers who might not be experts in secure systems.

KEY APPLICATIONS
• Smart home
• Smart city
• Smart grid
• Docking stations
• Printers and ink cartridges
• PCs and game accessories
• Industrial tools
• PCB components

KEY FEATURES
• State-of-the-art security relying on CC EAL5+ hardware
• Security functions
  • Authentication
  • Encryption
  • Secure channel
  • Firmware upgrade
• USB Type-C standard compliant
• LPWAN authentication compliant

KEY BENEFITS
• Full turnkey solution with secure OS and personalization services
• Optimized for small platforms
• Easy integration using libraries compatible with standard MCUs
STM32 RELEASING YOUR CREATIVITY

High-performance

STM32 F7
STM32 F4
STM32 F1

Mainstream

STM32 F0
STM32 F1
STM32 F3

Ultra-low-power

STM32 L0
STM32 L1
STM32 L4

Cortex-M0 & M0+

Cortex-M3
Cortex-M4
Cortex-M7

LONGEVITY 10 YEARS COMMITMENT

MORE THAN 30 PRODUCT LINES

With 10 product series, the STM32 portfolio offers an extraordinary variety of options including ARM® Cortex®-M cores (M0, M0+, M3, M4, and M7), giving developers flexibility to find the perfect match for their application. Particular attention is paid to make it easy to migrate from one device to another. The compatibility of binaries combined with the similar pinout assignment, proliferation of hardware IPs and higher-level programming languages greatly facilitates the work of developers.

HARDWARE TOOLS AND EMBEDDED SOFTWARE

Up to three dedicated HW tools to play and develop with STM32™ around LoRa® technology

STM32 NUCLEO PACK
P/N: P-NUCLEO-LRWAN1
(ST and Semtech)

DISCOVERY KIT
P/N: B-L072Z-LRWAN1
(ST and Murata®)

EXPANSION BOARD
P/N: I-NUCLEO-LRWAN1
(ST and USI®)

A LoRaWAN stack (I-CUBE-LRWAN) is now available from www.st.com/i-cube-lrwan

SOFTWARE TOOL

STM32CubeMX enables fast development thanks to its MCU clock configurator, power consumption calculator and code generation tools.

SOFTWARE TOOL

STM32 OPEN DEVELOPMENT ENVIRONMENT (STM32 ODE)

Additional ST expansion boards available

X-NUCLEO-STSAFE-A
STSAFE-A optimized secure element

X-NUCLEO-IKS01A1
Motion and environmental sensors

X-NUCLEO-NCF01A1
M24SR-based NFC tag expansion board

X-NUCLEO-IDB04A1
BlueNRG-based Bluetooth Smart expansion board

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