

STM32 ODE function pack for connecting 6LoWPAN IoT nodes to the Internet through an Ethernet network

Application	Sample Applications
Middleware	6LoWPAN
Hardware Abstraction	STM32Cube Hardware Abstraction Layer (HAL)
Hardware	STM32 Nucleo expansion boards X-NUCLEO-IDS01A4/X-NUCLEO-IDS01A5 (Connect)
	STM32 Nucleo development board

Features

- Complete firmware to connect 6LoWPAN and Ethernet networks
- Middleware libraries to support Contiki OS and Contiki 6LoWPAN protocol stack 3.x
- Support for mesh networking technology via the standard RPL protocol
- Sample implementations available for X-NUCLEO-IDS01A4 or X-NUCLEO-IDS01A5 boards connected to a NUCLEO-F429ZI board
- Easy portability across different MCU families, thanks to STM32Cube
- Free, user-friendly license terms

Description

FP-NET-6LPETH1 is an STM32 ODE function pack which lets you connect your IoT node in a 6LoWPAN wireless sensor network to the Internet via an Ethernet network.

The software, together with the suggested combination of STM32 and ST devices, can be used to develop applications such as smart city, home, building, lighting or remote monitoring.

The software runs on the STM32 microcontroller and includes drivers for SPIRIT1-based sub-1GHz RF communication modules ([SPSGRF-868](#) or [SPSGRF-915](#)).

The software is based on STM32Cube technology and expands STM32Cube-based packages.



■ Detailed description

What can you do with STM32 ODE function packs?

The STM32 ODE function packs leverage the modularity and interoperability of STM32 Nucleo and X-NUCLEO boards with STM32Cube and X-CUBE software, to create functional examples representing some of the most common use cases in each sphere of application.

These software function packs are designed to fully exploit the underlying STM32 ODE hardware and software components to best satisfy the final user application requirements.

Function packs may also include additional libraries and frameworks not present in the original X-CUBE packages, thus enabling new functions and creating more pertinent and usable systems for developers.

What is STM32Cube?

STM32Cube™ is designed by STMicroelectronics to reduce development effort, time and cost across the entire STM32 portfolio.

STM32Cube version 1.x includes:

- STM32CubeMX, a graphical software configuration tool that allows the generation of C initialization code using graphical wizards.
- A comprehensive embedded software platform specific to each series (such as the STM32CubeF4 for the STM32F4 series), which includes:
 - the STM32Cube HAL embedded abstraction-layer software, ensuring maximized portability across the STM32 portfolio
 - a consistent set of middleware components such as RTOS, USB, TCP/IP and graphics
 - all embedded software utilities with a full set of examples

How does this software complement STM32Cube?

This software is based on the STM32CubeHAL hardware abstraction layer for the STM32 microcontroller. The package extends STM32Cube by providing a board support package (BSP) for the sub-1GHz RF communication expansion boards.

The drivers abstract low-level details of the hardware and allow the middleware components and applications to access sensor data in a hardware-independent manner to access and control the SPIRIT1 based sub-1GHz RF communication modules (SPSGRF-868 or SPSGRF-915).

The package includes some middleware libraries to support the 6LoWPAN stack, along with a sample application to connect 6LoWPAN and Ethernet networks. Developers can use it to prototype end-to-end IoT applications.

Revision history

Table 1. Document revision history

Date	Version	Changes
19-Dec-2017	1	Initial release.

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