

# The EasyCAT Shield and Arduino compatible boards without the 3x2 pins SPI connector. AN-002



The EasyCAT Shield uses the 3x2 pins SPI connector to communicate with the microcontroller (Fig-1). This connector is standard on all the Arduinos, but some Arduino form factor compatible boards don't provide it. An example is the [STM32 Nucleo](#), a line of powerful development boards, based on the Arm STM32 Cortex-M microcontroller. Otherwise these kind of boards provide the SPI signals on pins 13, 12 and 11 (Fig-2).

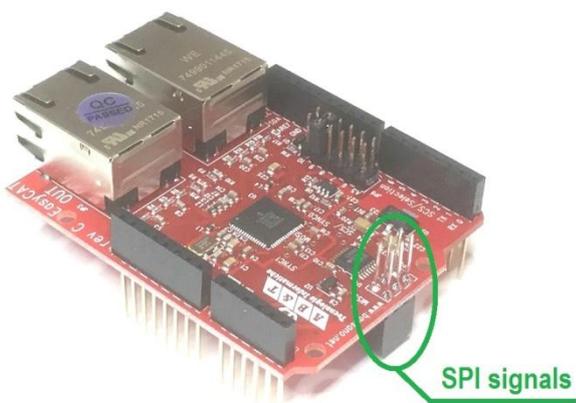


Fig-1

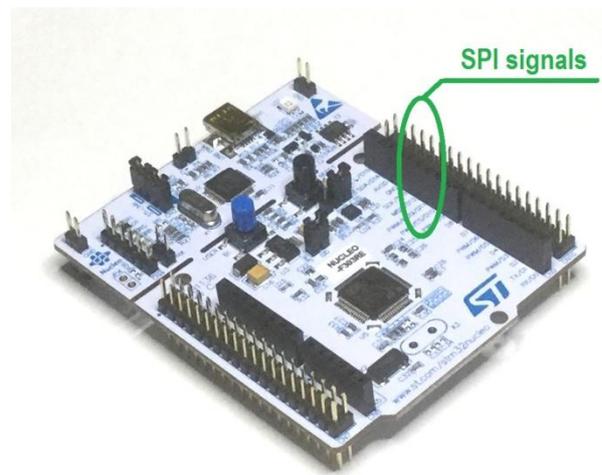


Fig-2

To address this issue in the EasyCAT rev "C" there is a set of three solder jumpers, on the bottom side of the board, that allow us to connect the SPI signals, SCK, MISO and MOSI, also on pins 13, 12 and 11 (Fig-3).

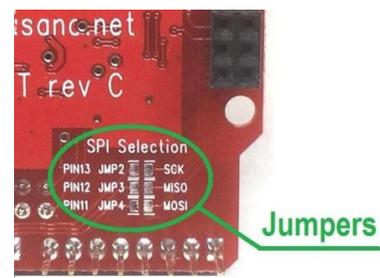


Fig-3



Fig-4

For your convenience the EasyCAT Shield can be ordered with the three solder jumpers already bridged, and the 3x2 connector not installed (Fig-4). To request this option select [Spi on 13 12 11](#) in the webshop.



**Fig. 5** The EasyCAT Shield on an STM32 NUCLEO board

The [STM32 Nucleo](#) boards are part of the [Arm Mbed](#) ecosystem, which includes a web based IDE and SDK.

To simplify the use of the EasyCAT shield in this environment, AB&T has ported the EasyCAT library, and some application examples, to it.

The source codes have been published in the Mbed code section and are freely downloadable from [here](#).

This allow you to realize a custom EtherCAT® slave, taking advantage of the simplicity of the EasyCAT shield and the power of the Arm microcontrollers.