

ST High Speed Datalog: a comprehensive multi-sensor data capture and visualization toolkit



Features

- High-rate (up to 6 Mbit/s) data capture software suite:
 - Compatible with [STDATALOG-PYSDK](#), ready-to-use for integration into any data science design flow
 - Compatible with [STBLESensor](#) app for system setup and real-time control
 - Able to configure and enable [ISM330DHCX](#) and [LSM6DSV16X](#) machine learning core unit (MLC) and [ISM330IS](#) intelligent sensor processing unit (ISPU)
 - Synchronized timestamping and labeling mechanisms common to all sensors
- Generic FFT library middleware to enable frequency domain analysis for any kind of sensor through fast Fourier transform (with programmable size, overlapping, and windowing)
- AzureRTOS: ThreadX, FileX, USBX
- Easy portability across different MCU families, thanks to STM32Cube
- Firmware modular examples based on eLoOM (embedded light object oriented framework for STM32) to enable code reusability at application level
- Free, user-friendly license terms

Description

The ST High Speed Datalog ([FP-SNS-DATALOG2](#)) is a comprehensive multisensor data capture and visualization toolkit, engineered to facilitate the development of embedded data science applications.

The tool has been designed as an open and modular instrument, tailored for data scientists and embedded designers, that streamlines the capture of wideband and heterogeneous digital data streams from a variety of sensing and actuation platforms.

ST High Speed Datalog is compatible with [STDATALOG-PYSDK](#), a data-centric design and user-friendly Python SDK, and can run with hardware boards that supply real-time data streams empowering users with full control of the data acquisition process.

The included firmware is compatible with the [STBLESensor](#) app, which also lets you manage the board and sensor configurations, start/stop data acquisition on SD card, and control data labeling. Sensor data can also be streamed using a C++-based companion host software or can be stored onto a microSD™ card.

Via the host PC and Bluetooth® Low Energy app, users can configure intelligent sensor processing unit (ISPU) and machine learning core unit (MLC). See Release Notes for the complete list of sensors supported.

The [FP-SNS-DATALOG2](#) firmware can run on [STEWAL-STWINBX1](#), [STEWAL-STWINKT1B](#), [STEWAL-MKBOXPRO](#), [STEWAL-AFC11](#), [B-U585I-IOT02A](#), [X-NUCLEO-IKS02A1](#) and [X-NUCLEO-IKS4A1](#) with [NUCLEO-U575ZI-Q](#) or with [NUCLEO-H7A3ZI-Q](#).

ST High Speed Datalog also natively supports [STEWAL-PDETECT1](#), [STEWAL-C34KAT1](#), [STEWAL-C34KAT2](#), [STEWAL-C34KPM1](#), [STEWAL-C34DIL24](#), [STEWAL-MKI230KA](#), [STEWAL-MKI245KA](#), [STEWAL-MKI246KA](#) and [SENSEVAL-SCB4XV1](#) add-ons for the [STEWAL-STWINBX1](#).

Product summary	
ST High Speed Datalog	FP-SNS-DATALOG2
STWIN.box	STEWAL-STWINBX1
Python software development kit (SDK) for data logging: complete toolkit with extensive examples for developers	STDATALOG-PYSDK
STWIN	STEWAL-STWINKT1B
SensorTile.box PRO	STEWAL-MKBOXPRO
Presence detection add-on for STWIN.box	STEWAL-PDETECT1
Firmware runs on:	STM32U585AII6Q , STM32U575ZIT6Q , STM32H7A3ZI
FW development environments	- Keil - IAR Embedded Workbench - STM32CubeIDE

Product summary	
Other utilities	STBLESensor mobile Android/iOS app
Applications	Condition Monitoring / Predictive Maintenance Sensing

It also supports [STEVAL-MKI153V1](#), [STEVAL-MKI223V1K](#), [STEVAL-MKI229A](#), [STEVAL-MKI234KA](#), [STEVAL-MKI240KA](#), [STEVAL-MKI247A](#) and [STEVAL-MKI251A](#) add-ons for [STEVAL-MKBOXPRO](#).

The ST High Speed Datalog is part of the ST Edge AI suite, which is an integrated collection of software tools, designed to facilitate the development and deployment of embedded AI applications.

This comprehensive suite supports both optimization and deployment of machine learning algorithms and neural network models, starting from data collection to final deployment on hardware, streamlining the workflow for professionals across various disciplines.

The ST Edge AI suite supports various ST products: STM32 microcontrollers and microprocessors, Stellar microcontrollers and MEMS smart sensors.

The ST Edge AI suite represents a strategic move to democratize edge AI technology, making it a pivotal resource for developers looking to harness the power of AI in embedded systems efficiently and effectively.

The software is also available on [GitHub](#), where the users can signal bugs and propose new ideas through [\[Issues\]](#) and [\[Pull Requests\]](#) tabs.

Revision history

Table 1. Document revision history

Date	Revision	Changes
24-Jan-2023	1	Initial release.
01-Mar-2023	2	Updated Description.
03-Apr-2023	3	Updated Title, Features and Description in cover page. Updated Product summary.
19-Jun-2023	4	Updated cover image, description and product summary.
20-Sep-2023	5	Updated cover image, product summary and description in cover page.
07-Mar-2024	6	Updated Product summary in cover page and Description.
01-Jul-2024	7	Updated Title, Cover image, Product summary and Description.
15-May-2025	8	Updated Features, Product summary and Description.

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