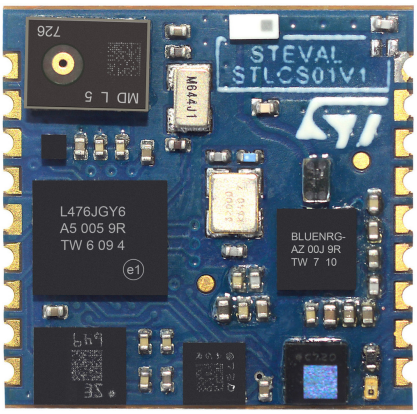
STEVAL-STLCS01V1

Data brief

SensorTile connectable sensor node: plug or solder





Product summary	
SensorTile connectable sensor node	STEVAL-STLCS01V1
Ultra-low-power microcontroller with FPU ARM Cortex-M4	STM32L476JG
Bluetooth low energy network processor supporting Bluetooth 4.1 core specification	BlueNRG-MS
MEMS audio sensor omnidirectional digital microphone	MP34DT05-A

Features

- Very compact module for motion, audio, environmental sensing and Bluetooth® low energy connectivity with a complete set of firmware examples
- Mobile connectivity via the STBLESensor app, available for iOS™ and Android™
- Main components:
  - STM32L476JG – 32-bit ultra-low-power MCU with Cortex®M4F
  - LSM6DSM – iNEMO inertial module: 3D accelerometer and 3D gyroscope
  - LSM303AGR – Ultra-compact high-performance eCompass module: ultra-low power 3D accelerometer and 3D magnetometer
  - LPS22HB – MEMS nano pressure sensor: 260-1260 hPa absolute digital output barometer
  - MP34DT05-A – 64 dB SNR digital MEMS microphone
  - BlueNRG-MS – Bluetooth low energy network processor
  - BALF-NRG-02D3 – 50 Ω balun with integrated harmonics filter
  - LD39115J18R – 150 mA low quiescent current low noise LDO 1.8 V
- 2 V - 5.5 V power supply range
- External interfaces: UART, SPI, SAI (serial audio interface), I²C, DFSDM, USB OTG, ADC, GPIOs
- Pluggable or solderable interface
- SWD interface for debugging and programming capability
- CE certified
- RoHS and China RoHS compliant
- WEEE compliant
- FCC certified
- IC certified
- TYPE certified

Description

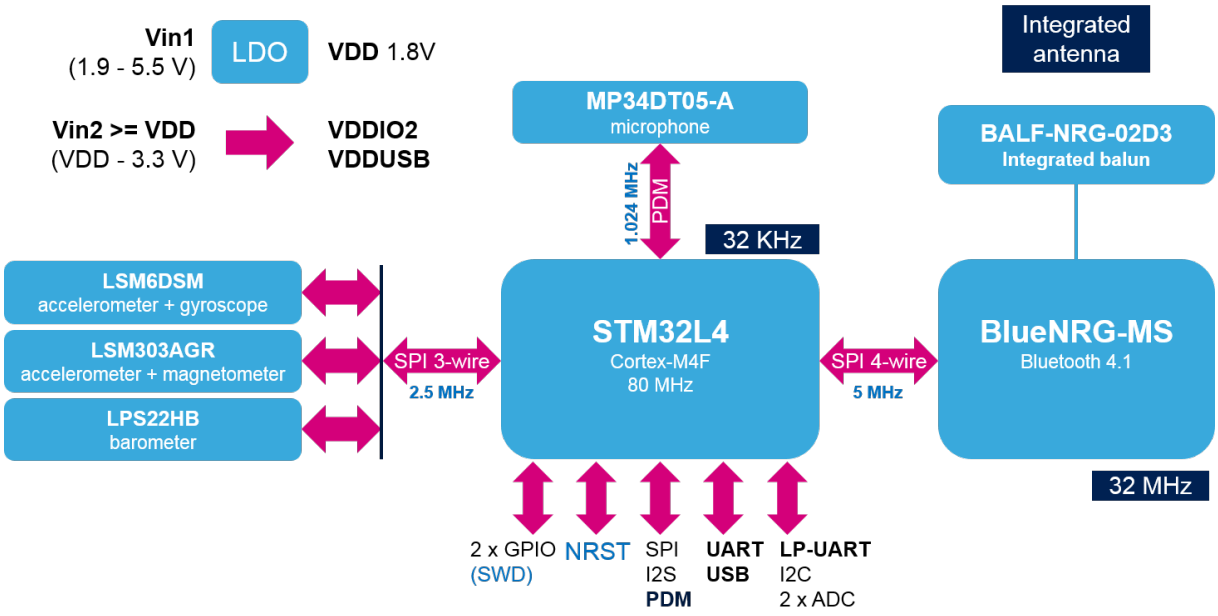
The STEVAL-STLCS01V1 (SensorTile) is a highly integrated reference design that can be plugged into form-factor prototypes, adding sensing and connectivity capabilities to new designs through a smart hub solution. It can also easily support development of monitoring and tracking applications like standalone sensor nodes connected to iOS™ or Android™ smartphone applications.

The SensorTile occupies a very small 13.5 x 13.5 mm square outline, with all the electronic components on the top side and a small connector on the bottom side to plug it onto the cradle expansion board. The connector pinout is repeated on 18 PCB pads to render the SensorTile a solderable system on module as well.

Refer to user manual UM2101 *Getting started with the STEVAL-STLKT01V1 SensorTile integrated development platform* for more information.

1 Block diagram

Figure 1. **Functional block diagram**



2 Regulatory approvals

The SensorTile module STEVAL-STLCS01V1 is marketed under the same FCC identifier (ID: S9NSTILE01) as the SensorTile kit (code STEVAL-STLKT01V1) as a class I permissive change. The FCC ID S9NSTILE01 is a limited modular approval as the module does not have RF shielding. The module was tested in the specific host with model number STEVAL-STLCX01V1, belonging to the SensorTile kit (code STEVAL-STLKT01V1). When integrated in a custom designed host other than the STEVAL-STLCX01V1, the SensorTile module STEVAL-STLCS01V1 must be tested and FCC certified in the custom designed host.

The SensorTile module STEVAL-STLCS01V1 is IC certified with certification number IC: 8976C-STILE01 and model number HVIN: STEVAL-STLCS01V1. Refer to the data brief of the SensorTile kit (code STEVAL-STLKT01V1) for complete information on PMN, FVIN and HMN. The SensorTile module is certified as a limited module because the modular transmitter does not have RF shielding. The module was tested in a representative host with model number STEVAL-STILECX01V1, belonging to the SensorTile kit (code STEVAL-STLKT01V1). When the SensorTile module is integrated into a different custom designed host, the developer of the host shall perform additional radiated emission tests and satisfy technical and labeling requirements as per RSP100 section 3.2 http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01130.html for IC certification.

The Bluetooth radio power output is set by default at 0 dBm. The FCC and IC certifications refer to this operating value. The power output can be changed up to 8 dBm by reprogramming the device firmware, but the change of this operating value will require an update of the FCC and IC certifications, with additional radio emission tests to be performed..

Revision history

Table 1. **Document revision history**

Date	Version	Changes
28-Mar-2017	1	Initial release.
20-Oct-2017	2	Updated features in cover page
17-Jul-2018	3	Updated cover page features and Figure 1. Functional block diagram.
05-Mar-2019	4	Updated cover page features.

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