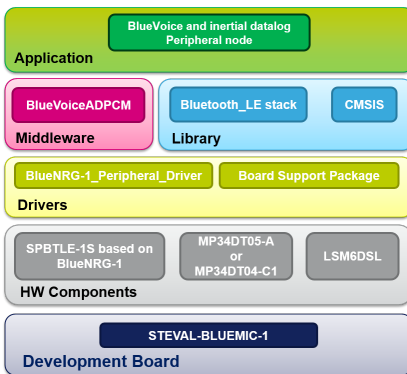# Audio and inertial data streaming via Bluetooth® low energy using SPBTLE-1S very low power application module based on BlueNRG-1

Features

- Complete software package supporting SPBTLE-1S module, based on BlueNRG-1 Bluetooth® low energy system-on-chip
- Bluetooth® v4.2 compliant:
    - supports master and slave modes
    - simultaneously supports multiple roles
- Digital audio signal acquisition and compression (ITU-T G.726 ADPCM)
- Voice streaming over BLE using a vendor specific profile available as a binary library in the package
- Motion sensor acquisition, 3-axis accelerometer and 3-axis gyroscope data streaming via BLE
- Data transmission to ST BlueMS app (v3.0.0 or higher), available for Android™ and iOS™
- BLE stack binary library and APIs, event callback interface, BlueNRG-1 CMSIS files and peripheral drivers
- Complete board support package to build applications using a digital MEMS microphone (MP34DT05-A or MP34DT04-C1) and a motion sensor (LSM6DSL)

Description

The STSW-BLUEMIC-1 is an evaluation software package which allows development of smart and innovative solutions based on the SPBTLE-1S module.

The latter is based on BlueNRG-1, very low power Bluetooth low energy single mode system-on-chip embedding a high performance, ultra-low power 32-bit Cortex-M0, with 160 KB of Flash memory and 24 KB of RAM.

The software package includes the entire Bluetooth® low energy stack and protocols, compliant with the STSW-BLUENRG1-DK.

It also contains a board support package that offers a complete set of APIs for digital MEMS microphone, 3-axis accelerometer and gyroscope, as well as button and LED management.

The BlueVoiceADPCM binary library, available as middleware, provides a vendor specific BLE profile for voice streaming and all the APIs needed for audio compression using the ITU-T G.726 ADPCM standard, packetization and streaming over BLE.

The STSW-BLUEMIC-1 allows an STEVAL-BLUEMIC-1 evaluation board to act as a peripheral in a point-to-point connection with a mobile device running ST BlueMS app, available for Android™ and iOS™. In this configuration, the evaluation board streams the audio acquired from the on-board digital MEMS microphone (MP34DT05-A or MP34DT04-C1) or motion data acquired from the 3-axis accelerometer and gyroscope (LSM6DSL).

Summary table	
BlueNRG-1 very low power Bluetooth low energy single mode system-on-chip embedding a high performance	BlueNRG-1
STSW-BLUEMIC-1 evaluation software package	STSW-BLUEMIC-1
STSW-BLUENRG1-DK software package	STSW-BLUENRG1-DK
MP34DT05-A ultra-compact, low-power, omnidirectional, digital MEMS microphone	MP34DT05-A
LSM6DSL 3-axis accelerometer and gyroscope	LSM6DSL
STEVAL-BLUEMIC-1 evaluation board	STEVAL-BLUEMIC-1

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For further information contact your local STMicroelectronics sales office.

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Revision history

Table 1. Document revision history

Date	Version	Changes
06-Jul-2017	1	Initial release.
06-Feb-2018	2	Updated: Features and Description Added: device summary table

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