

Ultra-low power Bluetooth® low energy microphone based on SPBTLE-1S certified module



Features

- Bluetooth® SMART small form factor board based on the SPBTLE-1S module, Bluetooth v4.2 compliant
- On-board SPBTLE-1S module, based on BlueNRG-1, Bluetooth low energy application processor system on chip embedding:
 - an ultra-low power ARM® Cortex®-M0 32-bit core architecture
 - programmable embedded 160 KB Flash
 - 24 KB embedded RAM with data retention
- On-board MP34DT05-A (or MP34DT04-C1 in the first generation board) digital MEMS microphone
- On-board LSM6DSL: MEMS 3D accelerometer ($\pm 2 / \pm 4 / \pm 8 / \pm 16$ g) plus 3D gyroscope ($\pm 125 / \pm 245 / \pm 500 / \pm 1000 / \pm 2000$ dps)
- Voltage supply: 1V8 or 3V3
- Battery or USB powered
- 100 mAh Li-Ion battery
- On-board STBC08 linear Li-Ion battery charger
- SWD connector
- Included in the development kit package:
 - STEVAL-BLUEMIC-1
 - Plastic box for housing STEVAL-BLUEMIC-1
 - 100 mAh Li-Ion battery
 - SWD programming cable
- SW development kit for audio and inertial MEMS data streaming over BLE
- ST BlueMS: Android and iOS demo App available in the respective stores
- CE certified
- RoHS and China RoHS compliant
- Contains Transmitter Module FCC (ID: S9NSPBTLE1S) certified
- Contains Transmitter Module IC (IC: 8976C-SPBTLE1S) certified

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

Description

The **STEVAL-BLUEMIC-1** evaluation board mounts the **SPBTLE-1S** Bluetooth® SMART application processor compliant with BT specification v4.2. It supports multiple simultaneous roles and can act as a Bluetooth Smart master and slave device at the same time.

This BLE wireless battery powered solution also embeds digital MEMS microphone **MP34DT05-A** (or MP34DT04-C1 in the first generation board) and 3D accelerometer + 3D gyroscope, which render this evaluation board suitable for a wide range of advanced smart applications.

The evaluation board comes with a SW development kit that includes the Bluetooth low energy stack, all the drivers for audio and inertial data acquisition, and button and LED management. A ready-to-use BlueVoice library is included as middleware and a sample application is provided to get you started with voice streaming over BLE to an Android or iOS device, running the ST BlueMS apps.

1 Schematic diagrams

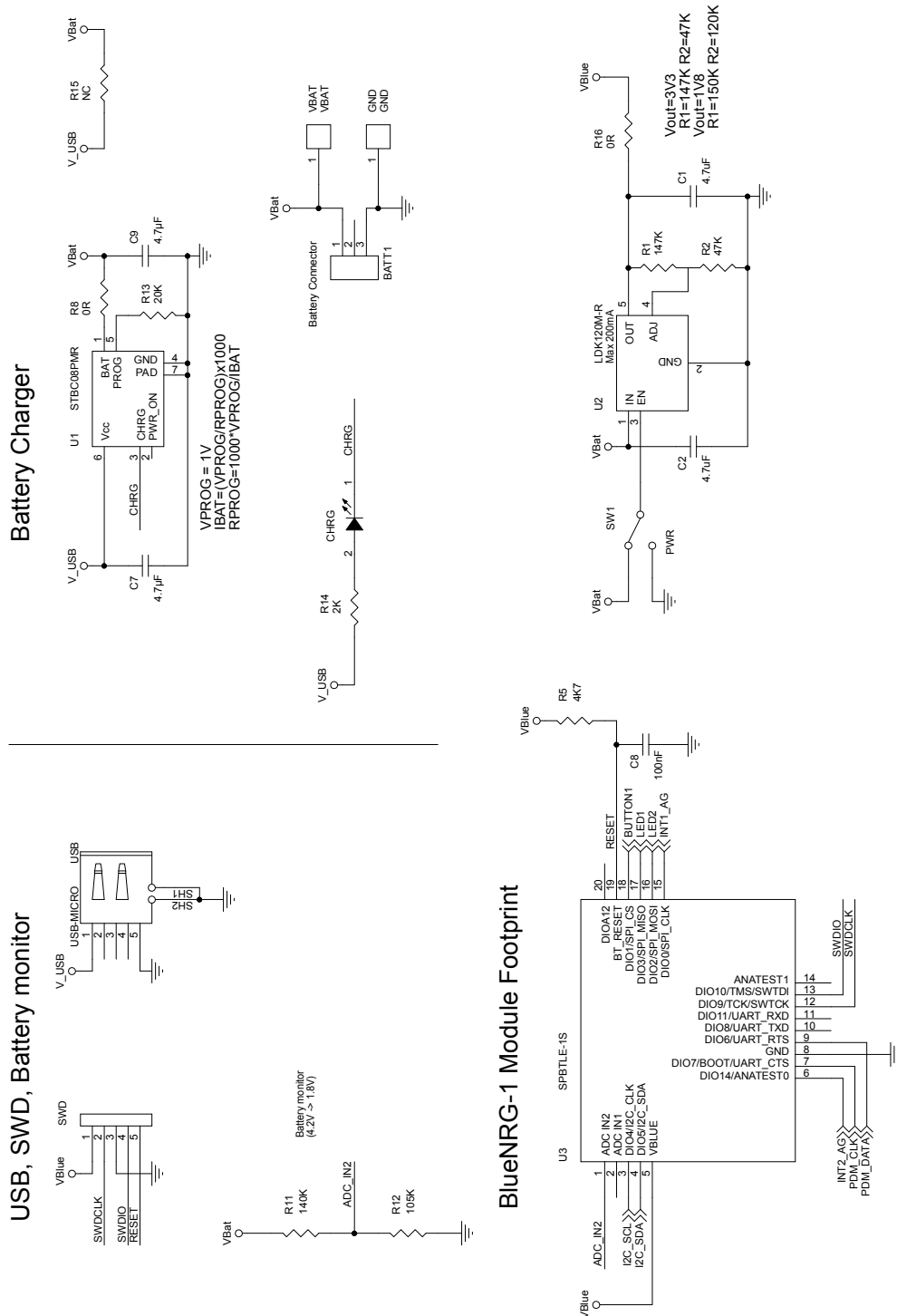
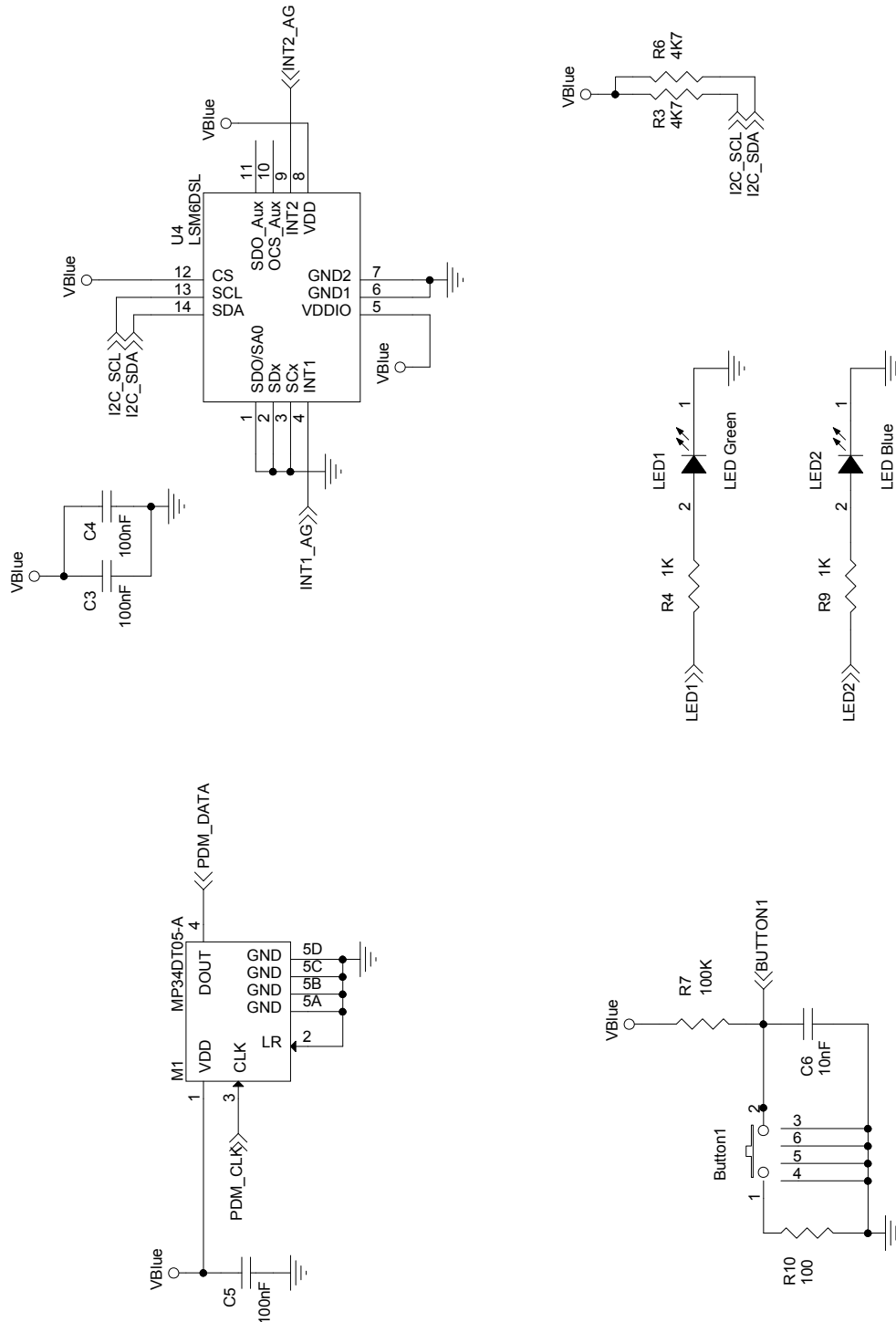
Figure 1. Power and SPBTLE-1S module


Figure 2. MEMS, button and LEDs


Revision history

Table 1. Document revision history

Date	Version	Changes
18-Jul-2017	1	Initial release.
20-Nov-2017	2	Updated cover page features.
06-Feb-2018	3	Added device summary table in cover page. Update schematic diagrams.

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