STEVAL-GPT001V1

Data brief

Thin-film solar smart watch based on SPV1050 energy harvester and battery charger

Features

- Sensor Tile Cradle with SPV1050TTR energy harvester and battery charger, humidity and temperature sensor, gas gauge, lithium battery charger, micro-USB port, ON/OFF switch and breakaway SWD connector
- 3.7 V / 100 mAh Li-Po battery
- SWD programming cable
- Silicon strap embedding the thin-film flexible solar modules and housing the SensorTile Cradle and the battery
- Software libraries and tools:
  - STSW-GPT001V1: dedicated SensorTile firmware package supporting different algorithms tailored to the on-board sensors and computation of system autonomy and charge stored in the battery
  - FP-SNS-ALLMEMS1: STM32 ODE function pack
  - FP-SNS-MOTENV1: STM32Cube function pack
  - STBLESensor: iOS and Android demo apps
  - BlueST-SDK: iOS and Android software development kit
  - Compatible with STM32 ecosystem through STM32Cube support
- STEVAL-STLCS01V1 SensorTile module (not included in the kit)
- Firmware debug/upload through the SWD connector and cable
- RoHS and WEEE compliant

Product summary	
Thin-film solar smart watch based on SPV1050 energy harvester and battery charger	STEVAL-GPT001V1
Ultra low power energy harvester and battery charger with embedded MPPT and LDOs	SPV1050TTR
BLE sensor application for Android and iOS	STBLESensor
Bluetooth low energy and sensor technology SDK	BlueST-SDK

Description

The STEVAL-GPT001V1 is a multi-sensor wearable unit hosted by a silicon strap and powered by the SPV1050TTR energy harvester and battery charger. Attached to the watch face and bands are a set of thin-film solar modules that are extremely efficient, especially in indoor environments.

The development kit simplifies prototyping, evaluation and development of innovative solutions, as well as increasing the autonomy of the system and charging the battery. The STEVAL-GPT001V1 cradle board is designed to accept the tiny STEVAL-STLCS01V1 SensorTile turnkey IoT sensor module, demonstrating the powerful processing capabilities of the ultra-low-power STM32L4 microcontroller and Bluetooth low energy connectivity based on the BlueNRG network processor, as well as a wide spectrum of MEMS motion and environmental sensors and a digital microphone.

1 Schematic diagram

Figure 1. STEVAL-GPT001V1 circuit schematic: power and connectors

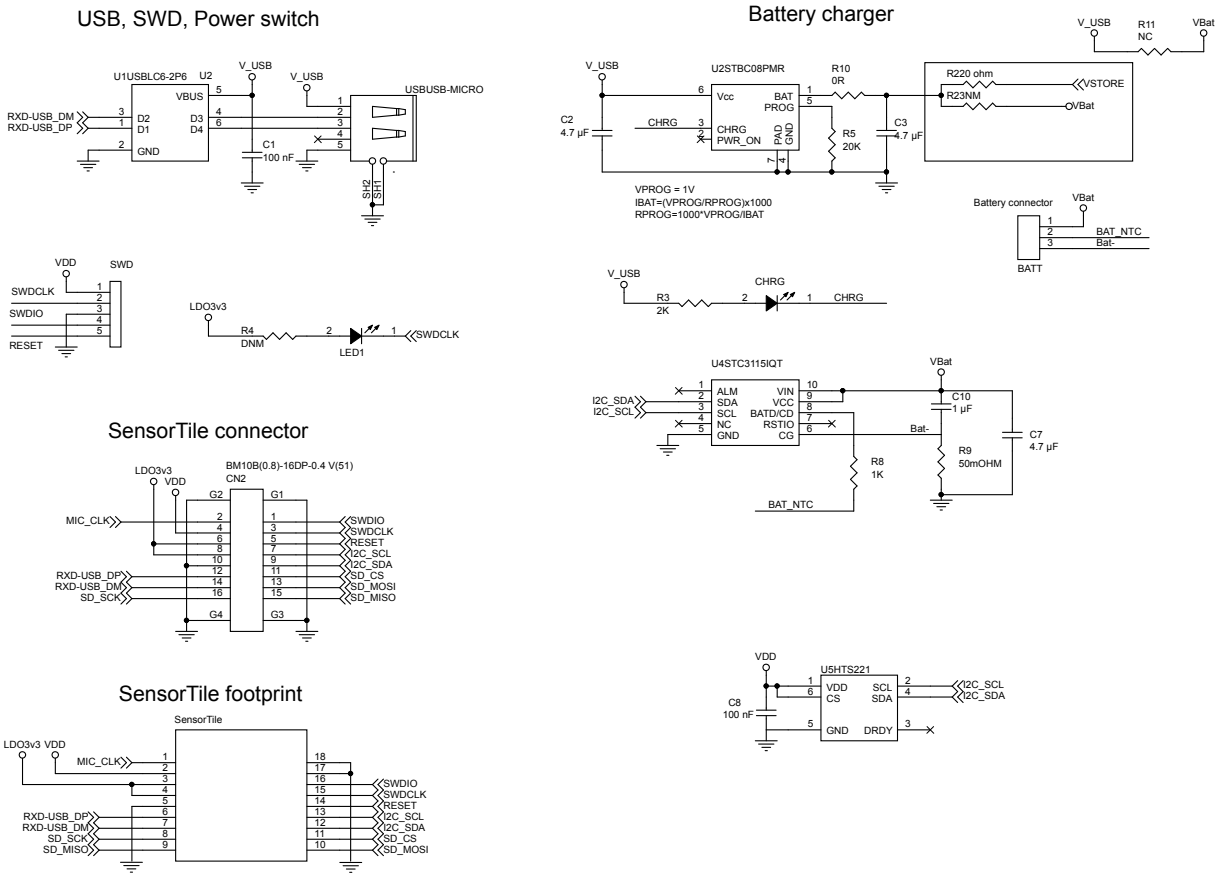
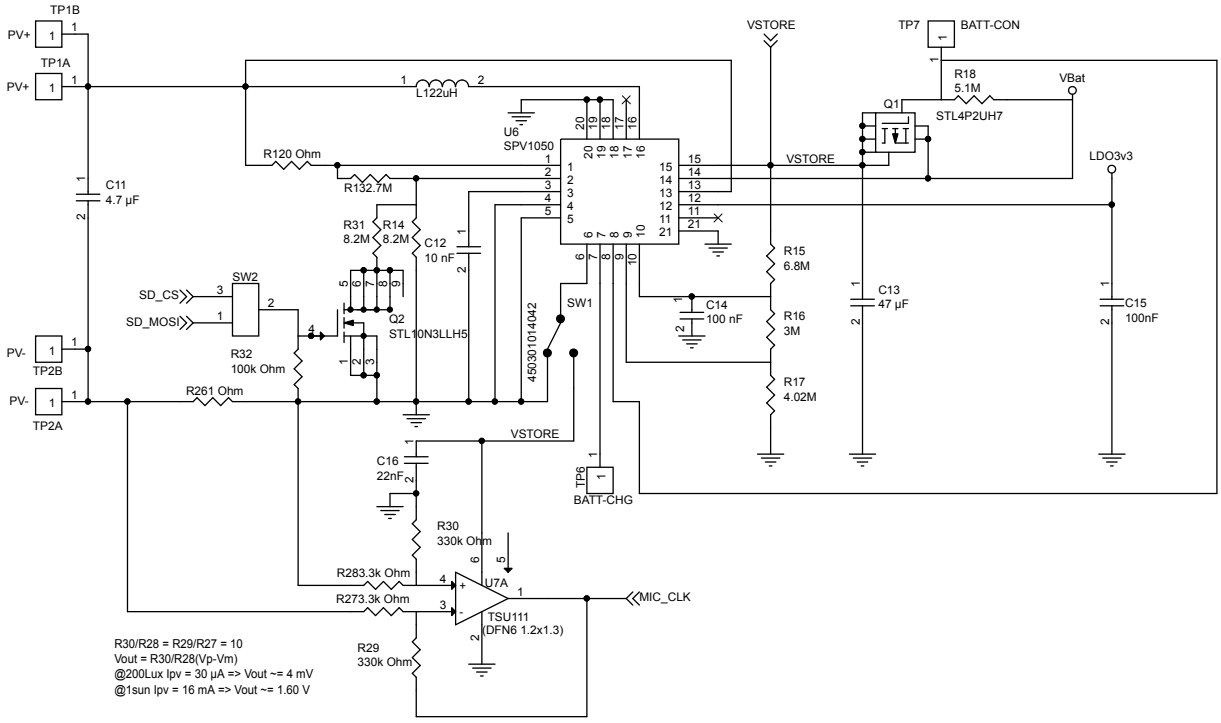


Figure 2. **STEVAL-GPT001V1 circuit schematic: harvesting**



Revision history

Table 1. **Document revision history**

Date	Version	Changes
04-Sep-2017	1	Initial release.
28-Sep-2017	2	Updated features and description on the cover page.
08-Nov-2018	3	Updated cover page image.