chanhvinh.com

life.augmented

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

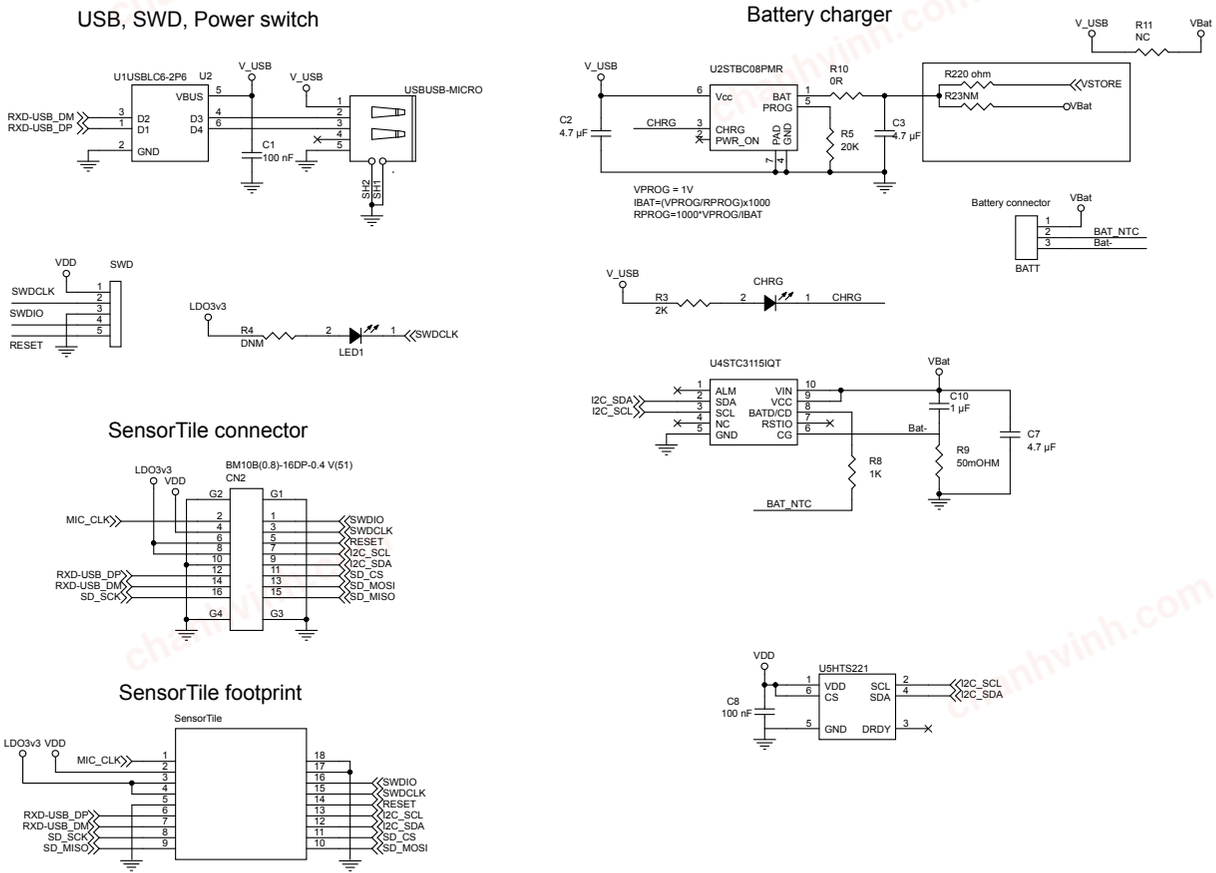
The STEVAL-GPT001V1 is a multi-sensor wearable unit hosted by a silicon strap and powered by the SPV1050TTR energy harvester and battery charger. Attached to the watch face and bands are a set of thin-film solar modules that are extremely efficient, especially in indoor environments.

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.

chanhvinh.com

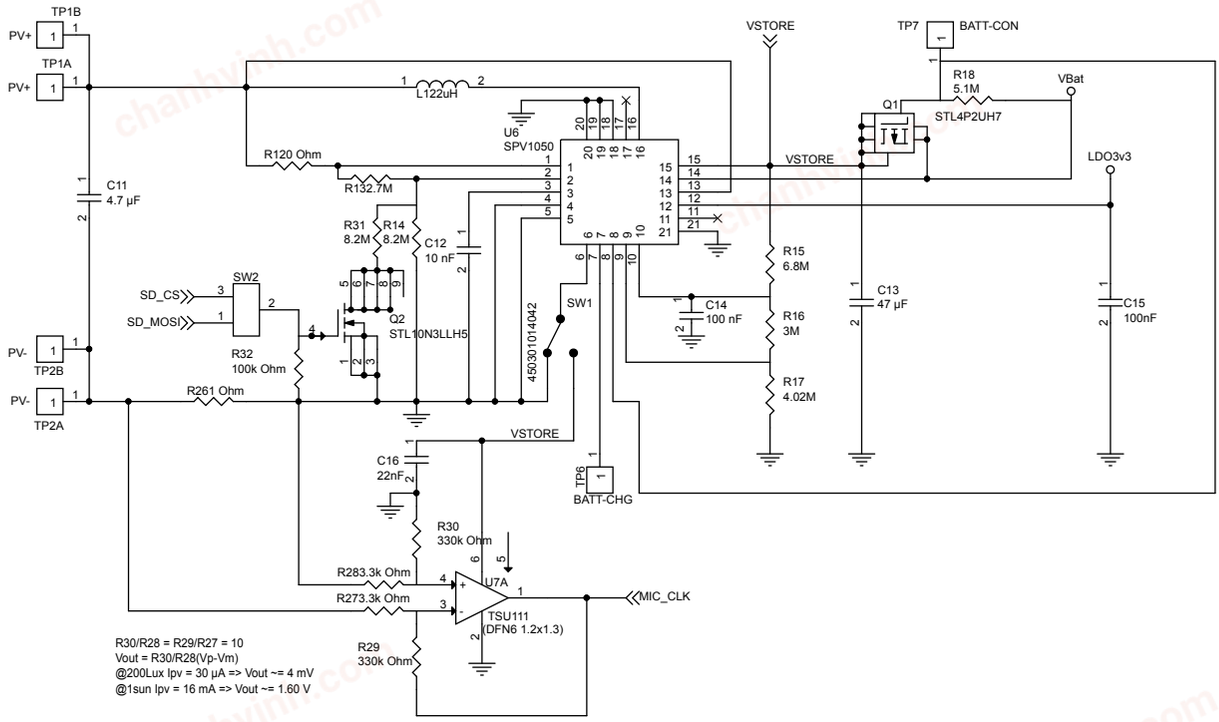
1 Schematic diagram

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



chanhvinh.com

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



chanhvinh.com

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.

chanhvinh.com

IMPORTANT NOTICE – PLEASE READ CAREFULLY

STMicroelectronics NV and its subsidiaries (“ST”) reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST’s terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers’ products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2018 STMicroelectronics – All rights reserved