

Overview

[Biscotti](#) is a step counter demonstration board designed by Future Electronics in partnership with ST Micro. It features ST Micro's Ultra-low-power Arm Cortex-M0+ MCU (STM32L031G6U6) with 32-Kbytes of Flash memory and a 3-axis ultra-low-power MEMS accelerometer (ST Micro's LIS2DS12) that detects step movement.

The [Biscotti](#) step counter is powered by a CR2450 with ST Micro's L6920DB synchronous step up converter and LD39020 low quiescent current LDO. If no movement for 15 second, the device will go into sleep mode.



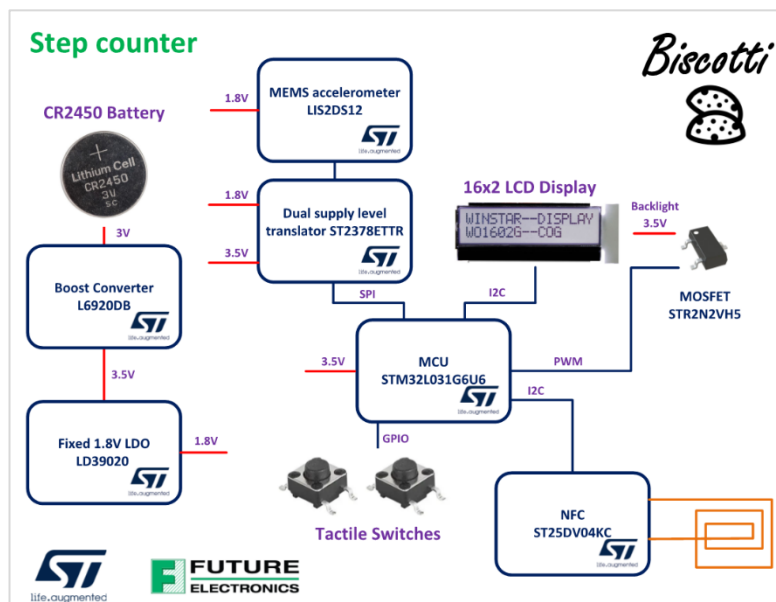
Ordering Part Number:

[FUT-ST-BISCOTTI](#)

Features

- [STM32L031G6U6](#) Ultra-low-power Arm Cortex-M0+ MCU with 32-Kbytes of Flash memory
- [LIS2DS12](#) 3-axis ultra-low-power MEMS accelerometer
- [ST25DV04KC](#) Dynamic NFC / RFID tag for mobile device pairing
- [L6920DB](#) synchronous step up converter
- [LD39020](#) low quiescent current LDO
- Winstar 16x2 LCD display

System Block Diagram



Biscotti Step Counter

Key Components

Function	Part Number	Description	Manufacturer
MCU	STM32L031G6U6	Ultra-low-power Arm Cortex-M0+ MCU with 32-Kbytes of Flash memory, 32 MHz CPU	ST Micro
Sensor	LIS2DS12	3-axis MEMS accelerometer, $\pm 2g/\pm 4g/\pm 8g/\pm 16g$ full scale, high-speed I2C/SPI digital output, ultra-low-power, high-performance acceleration sensor	ST Micro
NFC	ST25DV04KC	Dynamic NFC/RFID tag IC with 4-Kbit EEPROM, and fast transfer mode capability	ST Micro
Power	ST2378ETTR	8-bit Dual supply 1.71 V to 5.5 V level translator with I/O VCC +/-15 kV ESD protection	ST Micro
Power	L6920DB	Synchronous rectifier step up converter	ST Micro
Power	STR2N2VH5	N-channel 20 V, 0.025 Ohm typ., 2.3 A STripFET H5 Power MOSFET in SOT-23 package	ST Micro
Power	LD39020	200 mA very low quiescent current Linear regulator IC	ST Micro

Application Examples

- Wearable
- Motion detection
- Vibration detection

