

Breakout board embedding the VL53L4ED Time-of-Flight high-accuracy proximity sensor with extended temperature capability



Features

- VL53L4ED Time-of-Flight high accuracy proximity sensor with extended temperature capability
- High-performance proximity ranging, independent of the target size and reflectance
- From 0 to 1300 mm with full field of view (FoW)
- Effective sensor temperature range of -40°C to 105°C
- Up to 400 mm ranging under 100 klux
- Short distance linearity down to 1 mm
- Divisible board that can be used as a mini-PCB breakout board, easy to integrate into the customer's device
- Two breakout boards available in the package
- Compatible with X-NUCLEO-53L4A3

Description

The SATEL-VL53L4ED package includes two breakout boards, which can be easily integrated into the customer's devices.

The PCB section that embeds the VL53L4ED module is perforated. The developers can then break off the mini-PCB and use it in a 3.3 V supply application via flying wires.

This makes it easier to integrate the SATEL-VL53L4ED breakout boards into the development and evaluation devices thanks to their small size.

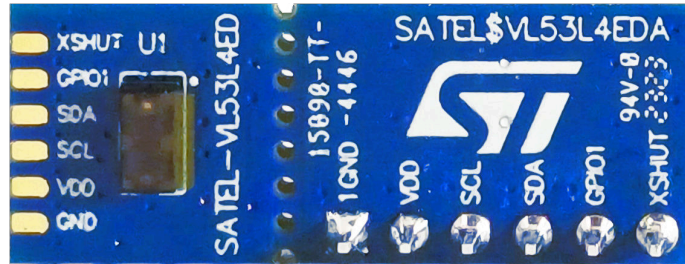
Note that the evaluation boards shall be tested exclusively under normal temperature conditions, the SATEL-VL53L4ED board is not rated for high temperature operation.

Product summary	
Breakout board embedding the VL53L4ED Time-of-Flight high-accuracy proximity sensor with extended temperature capability	SATEL-VL53L4ED
Time-of-Flight high-accuracy proximity sensor expansion board based on the VL53L4ED for STM32 Nucleo	X-NUCLEO-53L4A3
Time-of-Flight high-accuracy proximity sensor	VL53L4ED
Applications	Robotics and Industrial applications

1 Breakout boards

You can break the breakout boards along the perforations to use the mini-PCB.

Figure 1. Breakout board



This setup is easier to integrate into a customer's device thanks to its small form factor.

You can plug the VL53L4ED breakout boards directly onto the X-NUCLEO-53L4A3 expansion board through two six-pin connectors (see Figure 2), or connect them to the board through flying wires (see Figure 3).

Figure 2. SATEL-VL53L4ED breakout boards connected to the X-NUCLEO-53L4A3 expansion board

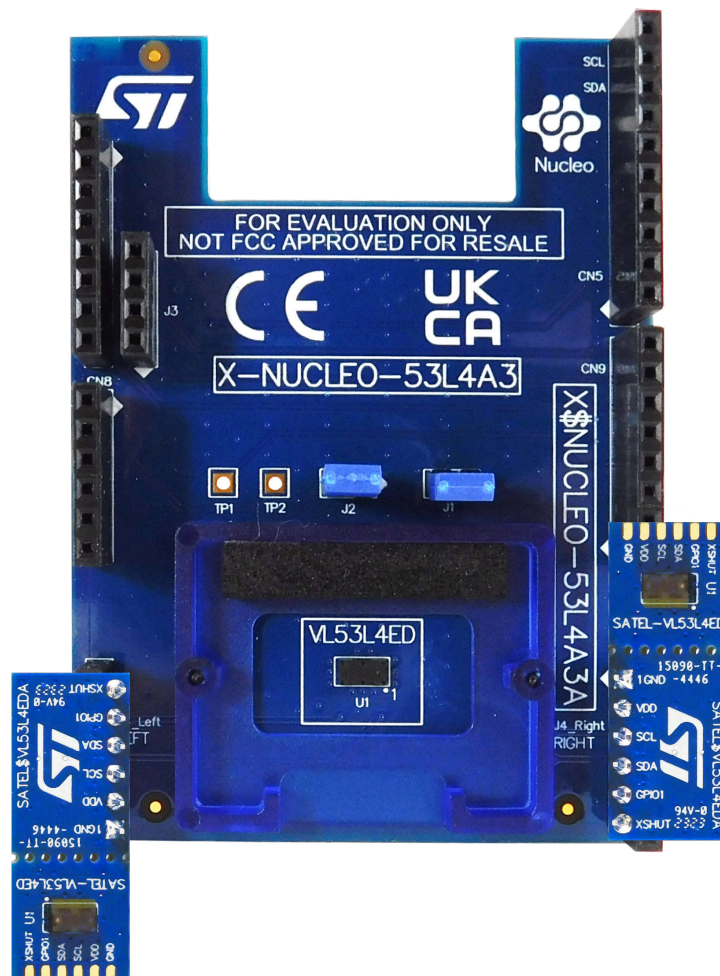
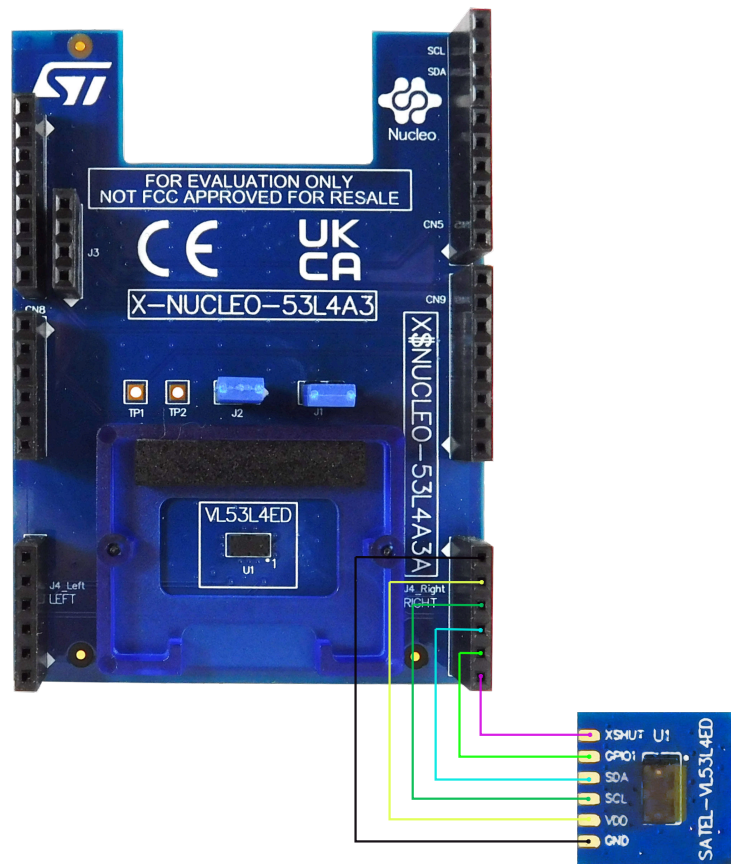
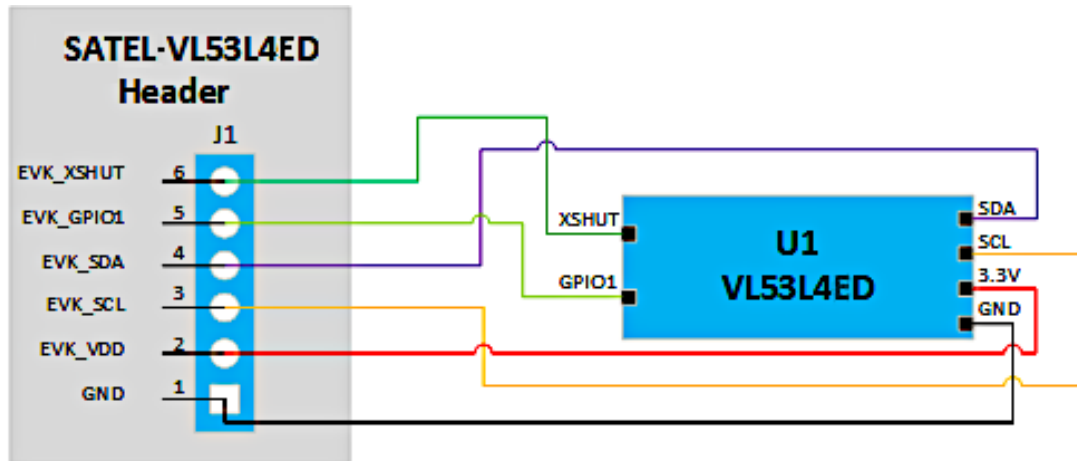


Figure 3. SATEL-VL53L4ED mini-PCB flying wire connection to the X-NUCLEO-53L4A3 expansion board



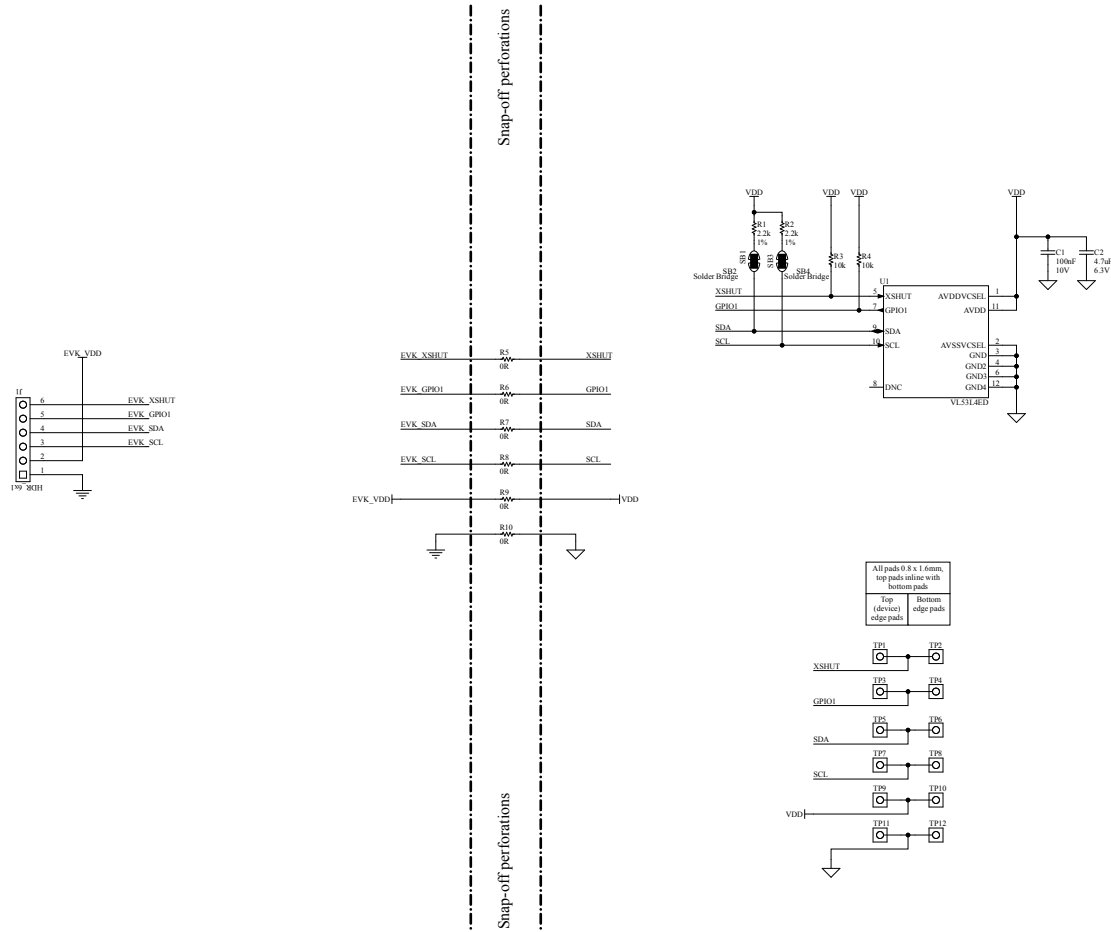
2 Simplified schematic

Figure 4. SATEL-VL53L4ED simplified schematic



3 Schematic diagrams

Figure 5. SATEL-VL53L4ED circuit schematic



4 Board versions

Table 1. SATEL-VL53L4ED versions

Finished good	Schematic diagrams	Bill of materials
SATEL\$VL53L4EDA ⁽¹⁾	SATEL\$VL53L4EDA schematic diagrams	SATEL\$VL53L4EDA bill of materials

1. This code identifies the SATEL-VL53L4ED expansion board first version.

Revision history

Table 2. Document revision history

Date	Revision	Changes
12-Sep-2023	1	Initial release.

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