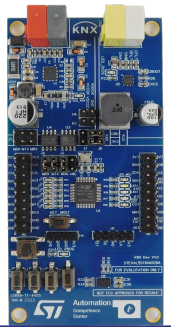
STEVAL-STKNX1CB

Data brief

New generation miniature transceiver STKNX evaluation and development kit



The picture shown is for illustration purpose only.
Actual product may vary depending on buyer's selection and availability.

Product summary	
The second-generation Miniature transceiver STKNX evaluation and development kit	STEVAL-STKNX1CB
Miniature KNX transceiver with voltage regulator	STKNX
Mainstream Value line, Arm Cortex-M0+ MCU with 128 Kbytes of Flash memory, 36 Kbytes RAM, 64 MHz CPU, 4x USART, timers, ADC, comm. I/F, 2-3.6V	STM32G070CBT6
Dual channel digital isolator	STISO621/STISO620
38 V, 3 A synchronous step-down converter with 17 µA quiescent current	L6983N33QTR
400 W, 40 V TVS in SMA	SMAJ40CA
Time-of-Flight (ToF) ranging sensor with multi target detection	VL53L3CXV0DH/1
Applications	Home automation, residential climate control and HVAC, lighting controls, large appliances, gas, water metering

Features

- Full KNX twisted pair device development kit based on the STKNX miniature transceiver
- Controlled by STM32G070CB microcontroller 32-bit Cortex®-M0+ MCU with 64 MHz - 128 KB flash
- Twisted pair TP1-256 support
- Compatible with ETS engineering tool software
- Test firmware already downloaded in the board to demonstrate features
- Standard serial wire debug (SWD)
- UART through an isolated USB host interface for connecting a PC
- One button and one LED for KNX programming
- Four buttons and four LEDs for basic KNX sensors and actuators emulation
- Optional isolation between STKNX and STMG070CB
- Auxiliary power supply is available
- Operating temperature range -40°C to +85°C
- An open SDK with ETS database is available

Description

This STEVAL-STKNX1CB is a designed board with the STKNX as KNX device transceiver, the low power STM32G070CBT6 as main controller, the STISO620/ STISO621 as isolated devices and the L6983N33 as power supply device. Integrated VL53L3CX for KNX sensor development. All the necessary components both to evaluate the performance of the STKNX circuit and to develop a KNX device on a twisted pair medium according to the TP1-256 standard.

An open SDK with third-party KNX stack and an ETS database are available for this board, the SDK, and ETS DD can be used by customers for study and estimation.

An SWD interface and a UART interface on the board for programming and debugging.

The standard KNX programming button and LED are present on the kit. In addition, four basic buttons and four LEDs are available to emulate basic KNX sensors/ actuators or to propose any debug facility.

The evaluation kit provides isolators between the microcontroller and the STKNX.

Disabled by default, they can be enabled to allow development in any condition of an SELV product.

An auxiliary power supply can used on the board.

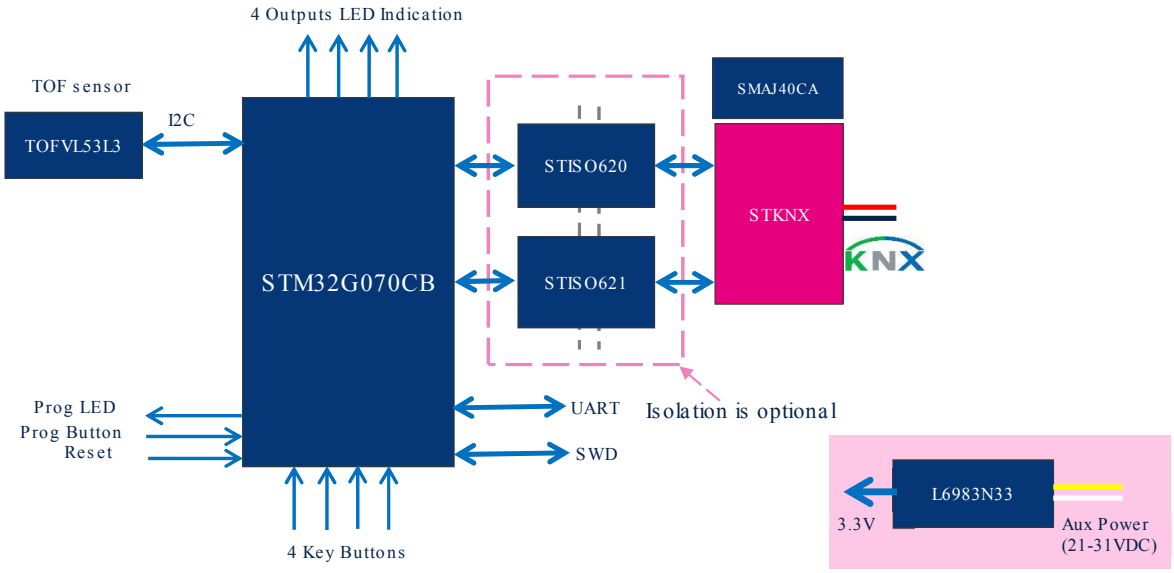
Important:

These evaluation boards are custom designed and built, in small quantities, according to specific requests from customers and are destined for evaluation and testing of ST products in a research and development setting. Please contact ST to provide your specific requests and get your custom built board(s).

1 Solution overview

The solution is based on a single MCU STM32G070 and STKNX, use the STISO621/620 for isolation, L6983N33 for convert auxiliary power for KNX power supply to 3.3 V, TOFVL53L3 was integrated on the board for developing KNX sensor related products.

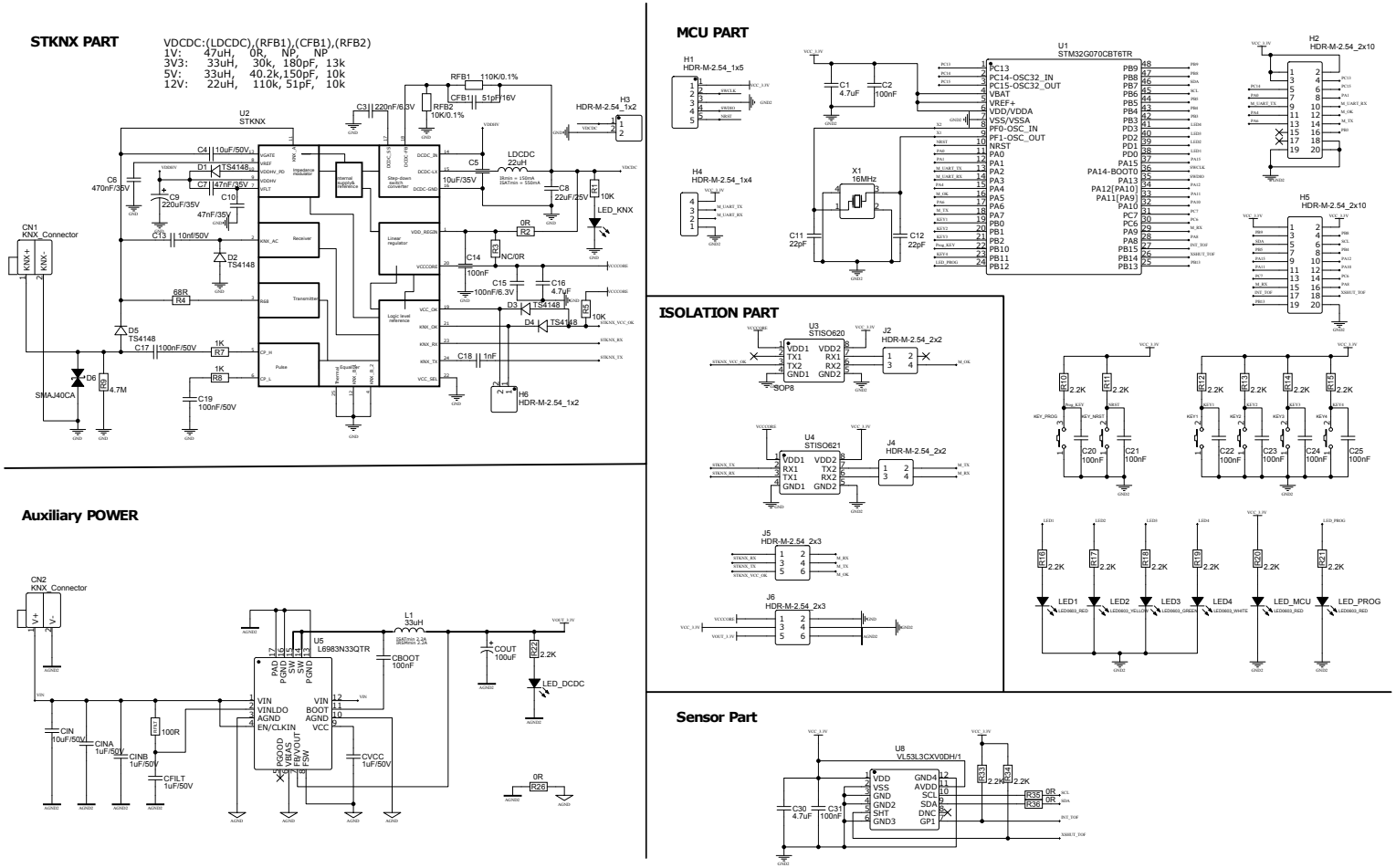
Figure 1. Solution overview



2 Schematic diagrams

Important: These schematics are for illustration purpose only. Actual product may vary depending on buyer's selection and availability.

Figure 2. STEVAL-STKNX1CB circuit schematic



Revision history

Table 1. **Document revision history**

Date	Version	Changes
08-Nov-2023	1	Initial release.
15-Apr-2024	2	Updated Section Description.