KNX presence sensor with PIR and TMOS integration function
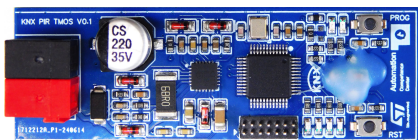

Fully assembled board developed for performance evaluation only, **not available for sale**

Features

- KNX twisted-pair presence sensor based on the STKNX miniature transceiver
- Controlled by STM32G070CB microcontroller 32-bit Cortex®-M0+ MCU with 64 MHz - 128 KB flash
- PIR sensor was integrated to detect moving detection
- TMOS sensor was integrated to detect the presence of stationary and moving objects
- Compatible with ETS engineering tool software
- Test firmware already downloaded on the board to demonstrate features
- Standard serial wire debug (SWD)
- 1 button and one LED for KNX programming
- 4 LEDs for indicating different sensor status
- Additional power supply to the sensor board is not needed
- Operating temperature range -40 to +85°C
- Open SDK with ETS database available

Description

The STDES-KNXPSENSOR is a KNX presence sensor board with STKNX as KNX device transceiver, and STM32G070CB as main controller.

Integrated PIR and TMOS sensor for presence detection which include moving objects and stationary objects.

An open SDK with third-party KNX stack and an ETS database were available for this board, the SDK, and ETS DD can be used by customer 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 LEDs are available to indicate sensor status.

Product summary	
KNX presence sensor with PIR and TMOS integration function	STDES-KNXPSENSOR
New generation miniature transceiver STKNX evaluation and development kit	STEVAL-STKNX1CB
Miniature KNX transceiver with voltage regulators	STKNX
Mainstream Value line, Arm Cortex-M0+ MCU	STM32G070CBT6
Low-power, high-sensitivity infrared (IR)	STHS34PF80
400 W, 40 V TVS in SMA	SMAJ40CA
Applications	Smart home

DB5471 - Rev 1 - April 2025
For further information, contact your local STMicroelectronics sales office.

www.st.com

1 Solution overview

The STDES-KNXPSENSOR is based on a single MCU STM32G070CB and STKNX. The solution use the PIR sensor and STHS34PF80 for presence detection for moving and stationary person.

The sensor status was send to KNX bus for home/building automation.

Figure 1. Solution overview
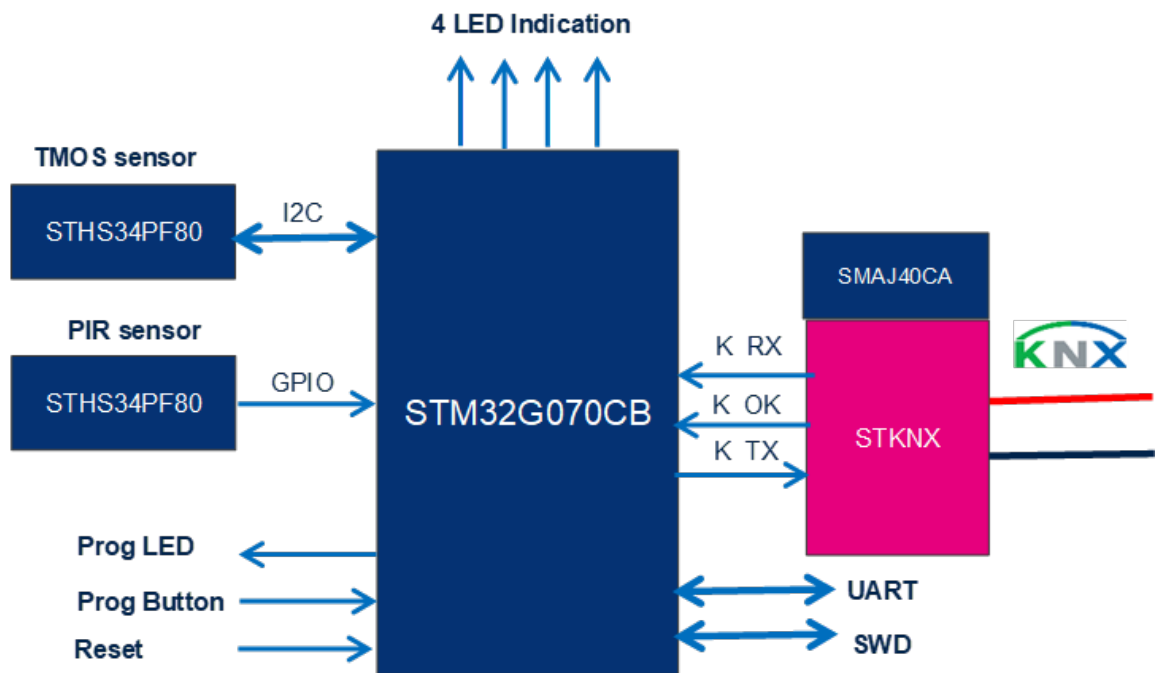
2 Schematic diagrams
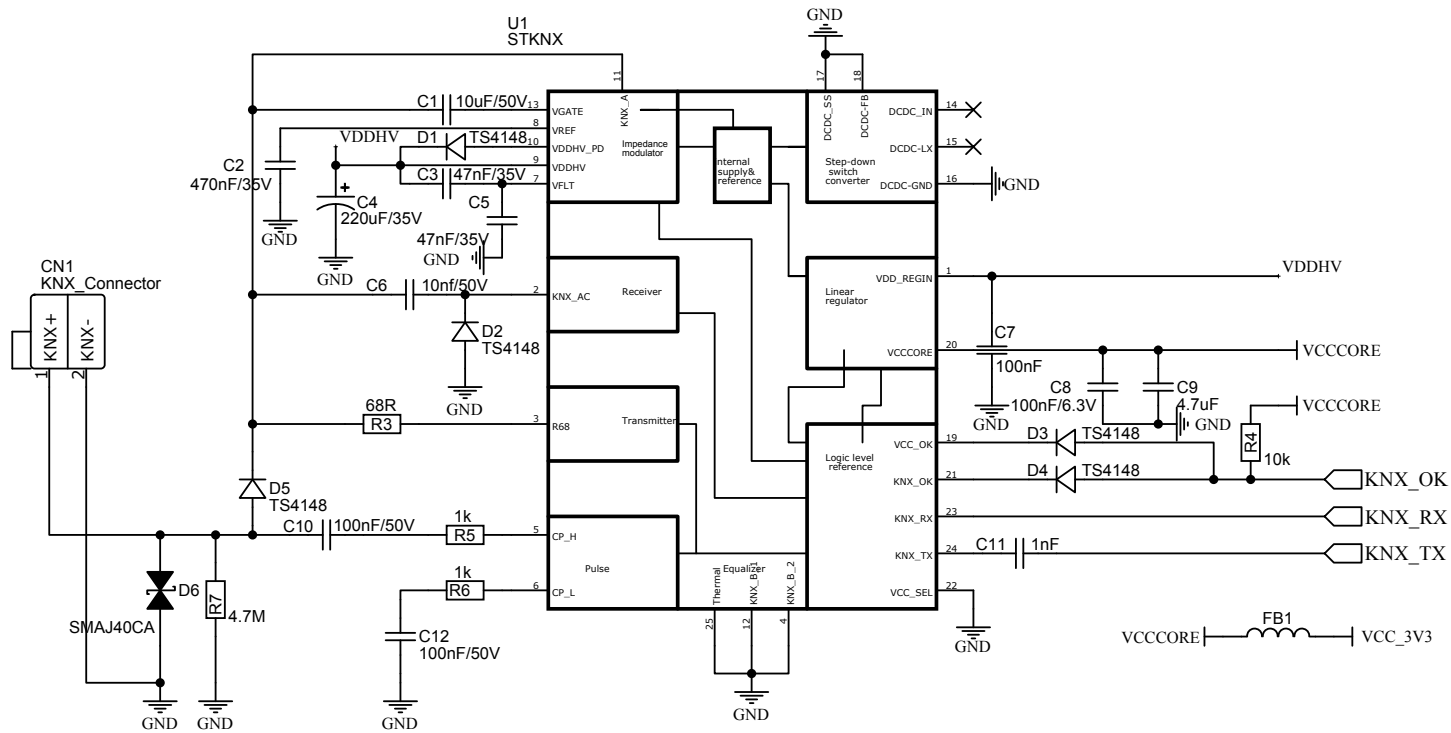
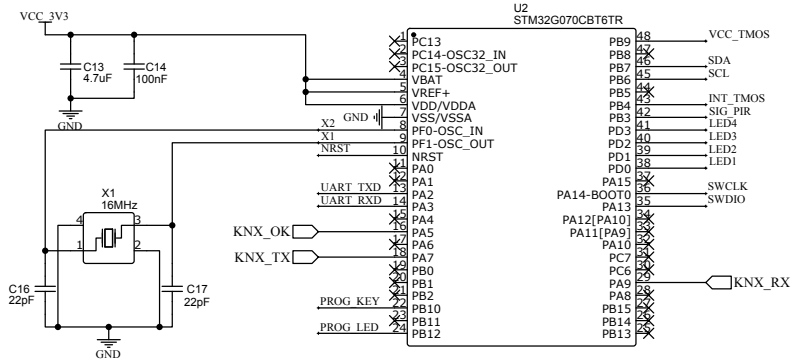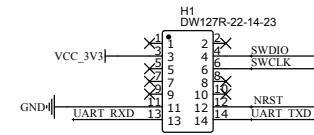Figure 2. **STDES-KNXPSENSOR circuit schematic (1 of 2)**

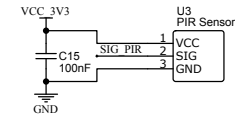**STKNX PART**

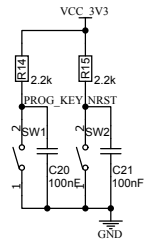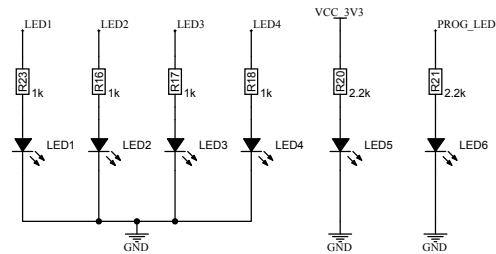## Figure 3. STDES-KNXPSENSOR circuit schematic (2 of 2)

MCU

SWD & UART

PIR

TMOS
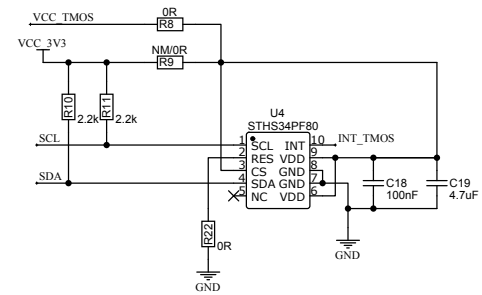
KEY

LED

Revision history

Table 1. Document revision history

Date	Revision	Changes
11-Apr-2025	1	Initial release.

IMPORTANT NOTICE – READ CAREFULLY