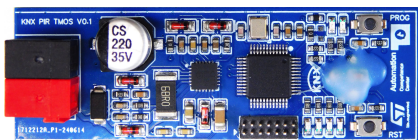


KNX presence sensor with PIR and TMOS integration function



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-KNXSENSOR** 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.

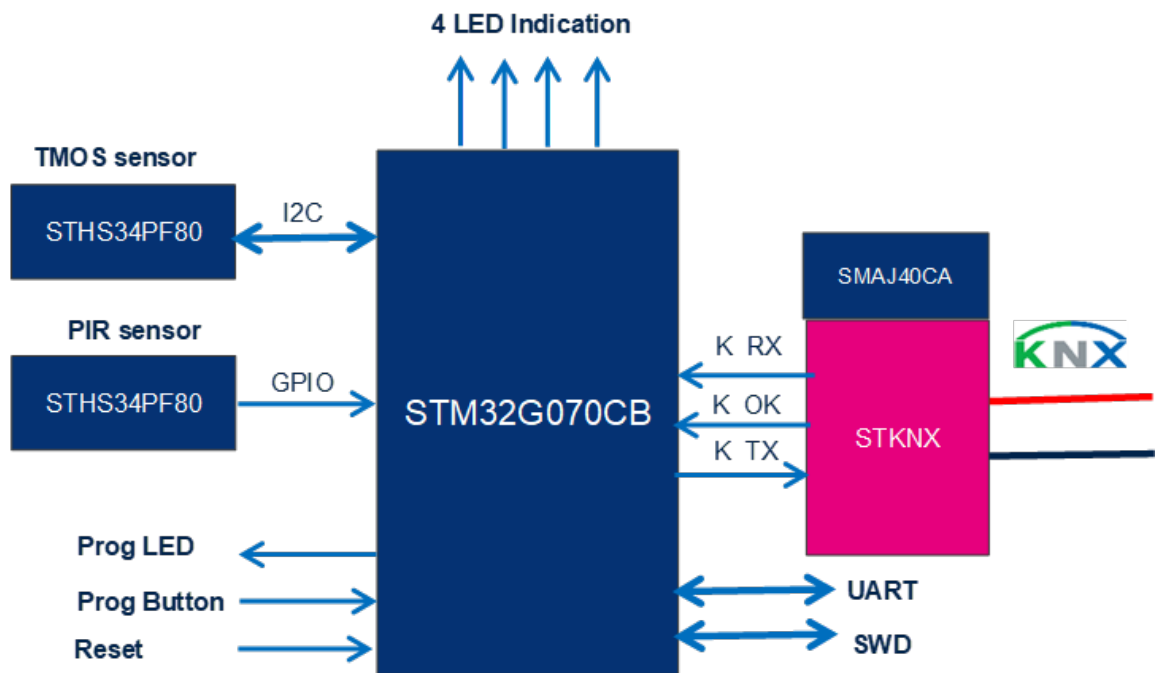
| Product summary | |
|---|------------------------|
| KNX presence sensor with PIR and TMOS integration function | STDES-KNXSENSOR |
| New generation miniature transceiver STKNX evaluation and development kit | STEVAL-STKNX1CB |
| Miniature KNX transceiver with voltage regulators | STKNX |
| Mainstream 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 |

1 Solution overview

The **STDES-KNXSENSOR** 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-KNXSENSOR circuit schematic (1 of 2)

STKNX PART

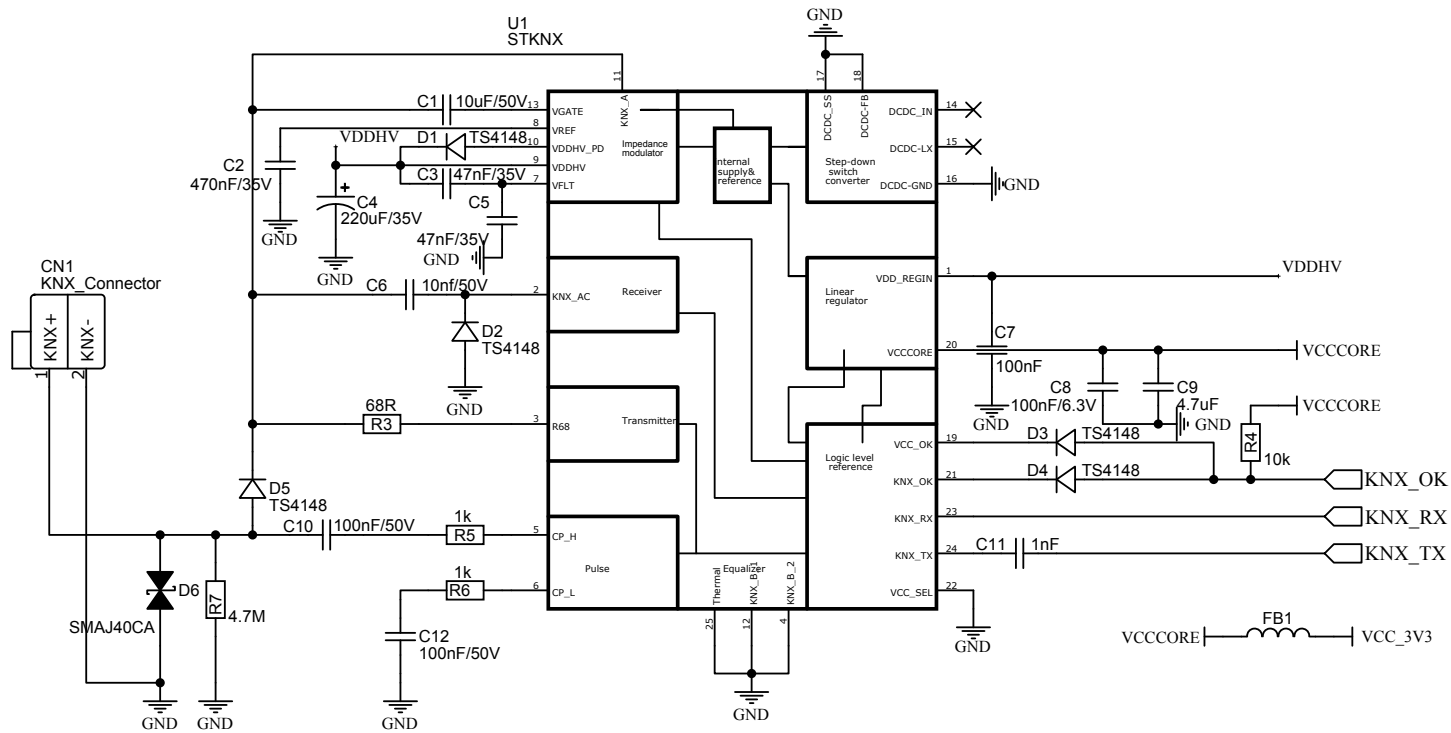
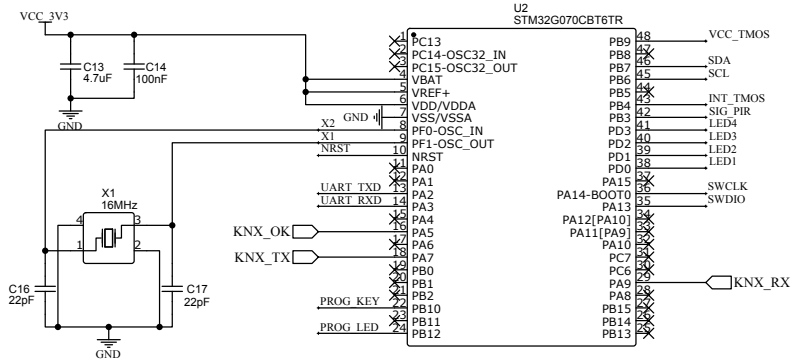
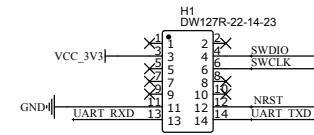


Figure 3. STDES-KNXSENSOR circuit schematic (2 of 2)

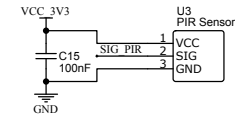
MCU



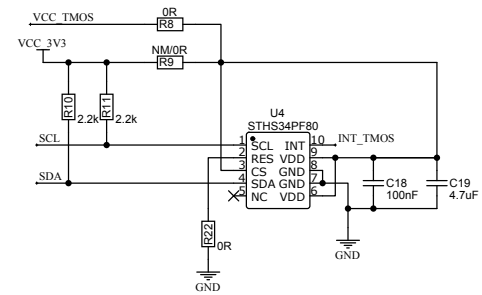
SWD & UART



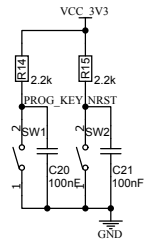
PIR



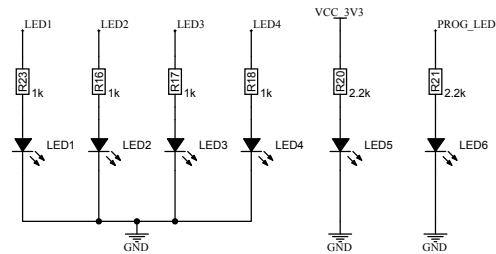
TMOS



KEY



LED



Revision history

Table 1. Document revision history

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

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