

Product Document



User Guide

UG001012

AS8579 Adapter Board

User Manual (HW/SW)

AS8579-SS_EK_AB

v1-00 • 2021-Apr-16

Content Guide

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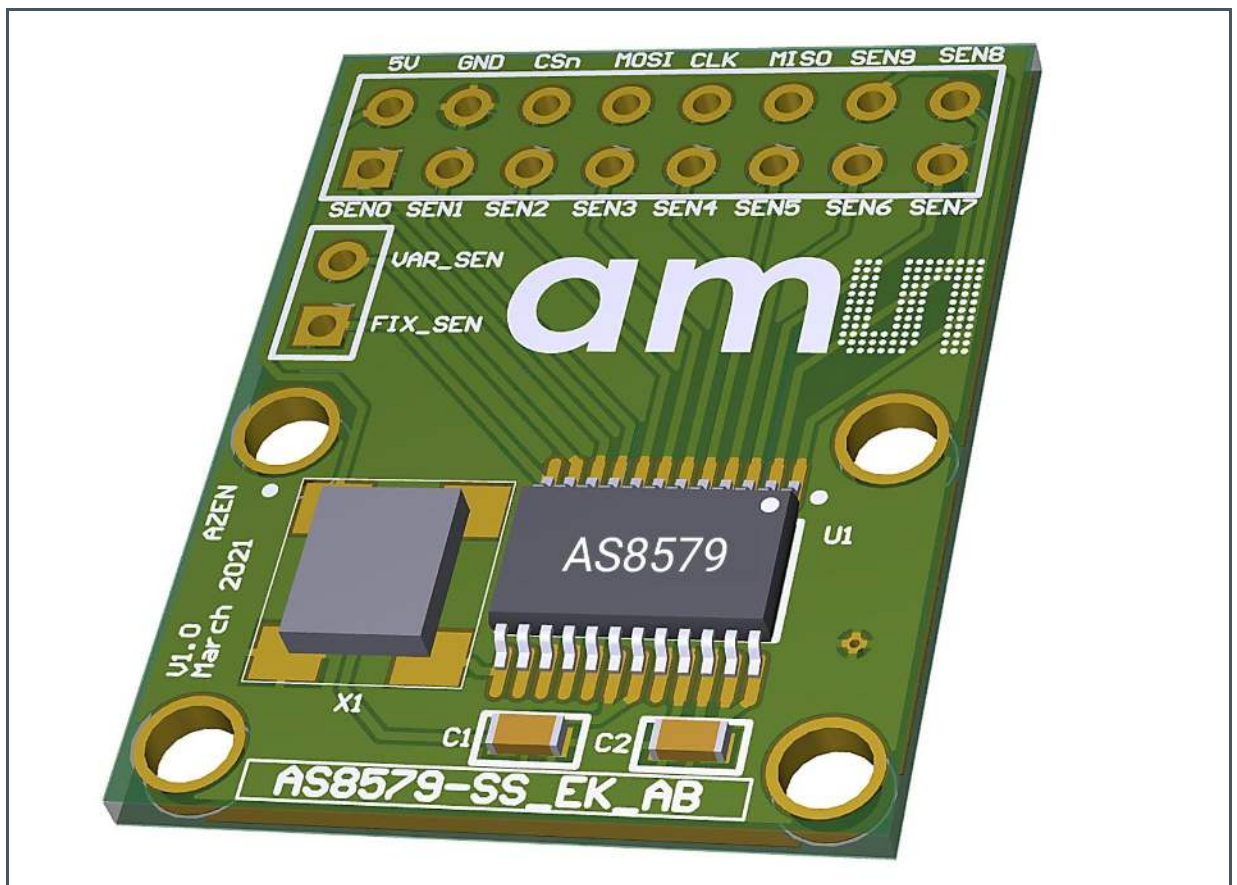
1 Introduction

This manual explains how to use the AS8579-SS_EK_AB hardware. The Hardware is designed to test and evaluate the features of AS8579 capacitive sensor. The AS8579 is a sensor, which measures the capacitive value by separately measuring the 10-bit Information (accumulated to 14-bit) of I and Q. This 14-bit information provides the capacitance of the application. The I and Q data can be read over a standard SPI interface.

For first setting up, please see application note: [AS8579_SPI_Configuration_AN001003_1-00](#).

1.1 Kit Content

Figure 1:
AS8579 Adapter Board Kit Content



1.2 Ordering Information

| Ordering Code | Description |
|-----------------|----------------------|
| AS8579-SS_EK_AB | AS8579 Adapter Board |

2 Board Description

The PCB can be connected via standard SPI to a microcontroller. The Production-Programmer from SD4Y and the **ams** I&P-Box are also recommended tools for communication/programming interface.

If you want to connect the I&P box to the Adapter Board, a level shifter is needed (the I&P Box works with 3.3 V voltage levels).

The PCB is equipped with all necessary peripheral components for easy evaluation.

Figure 2:
AS8579 Adapter Board

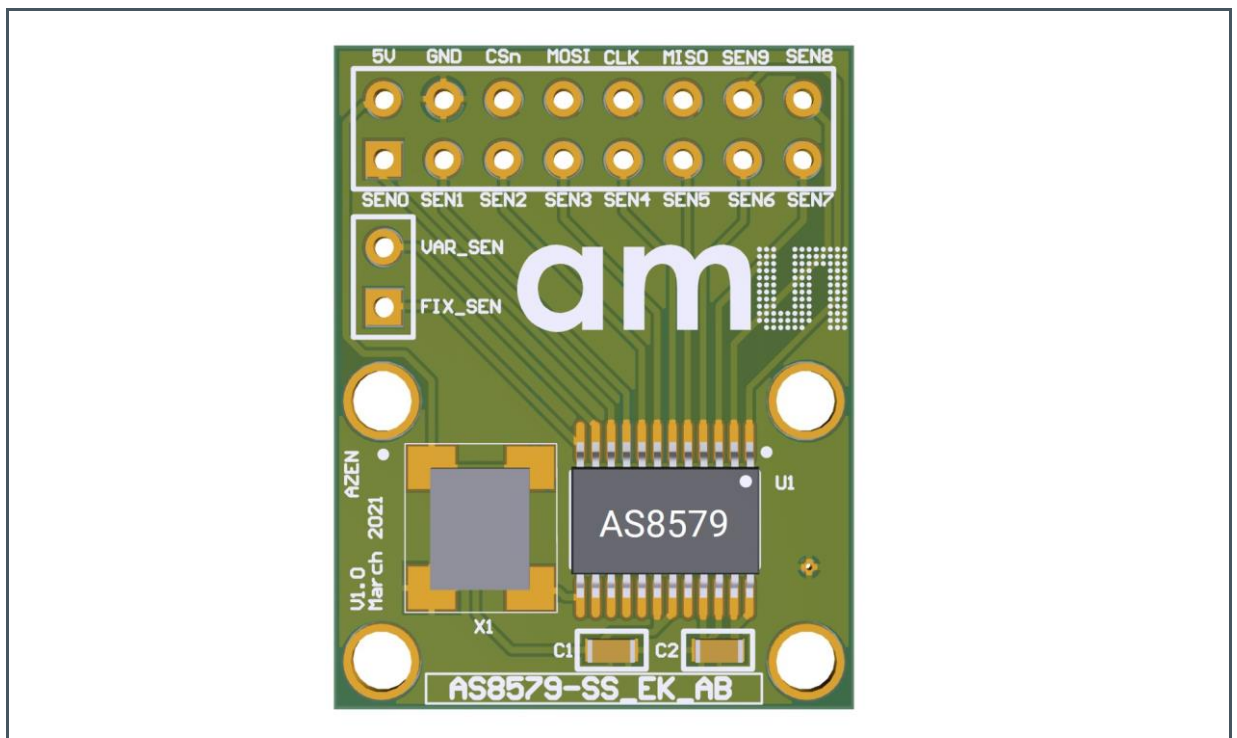


Figure 3:
BOM

| Symbol | Description |
|--------|--------------------------|
| U1 | Capacitive sensor AS8579 |
| C1 | Capacitor 100 nF |
| C2 | Capacitor 1 μ F |
| X1 | Oscillator 48 MHz |

2.1 Detailed Description

Figure 4:
AS8579 Adapter Board Overview

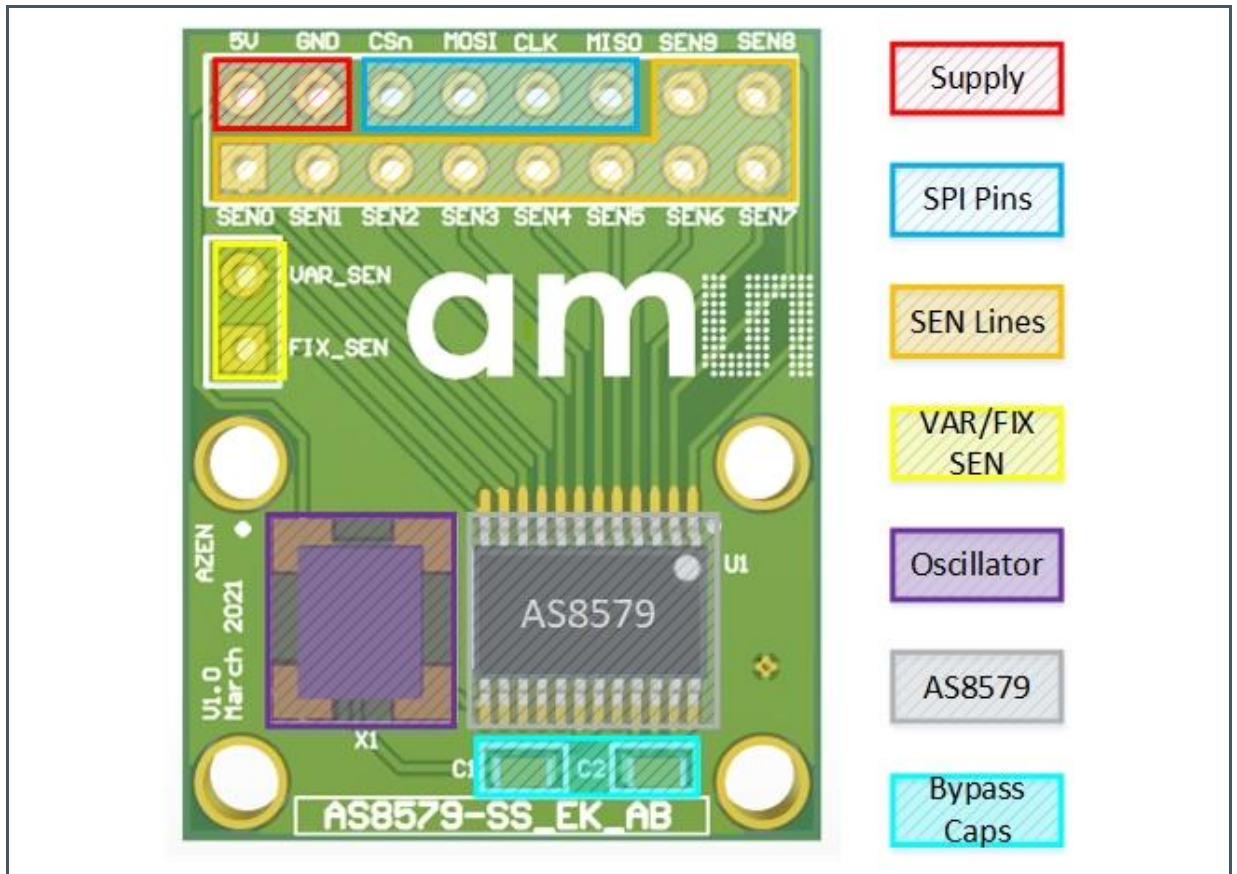


Figure 5:
Description

| Components | Description |
|--------------|---|
| Supply | Pin 5 V supply and ground |
| SPI Pins | Communication and Programming Interface |
| SEN Lines | Sensing interface |
| VAR/ FIX SEN | Pins for cable and PCB shielding |
| Oscillator | Oscillator for clock generation of system clock frequency input Settings: EDIV=0000b (default value) -> CLK_E divider is 12 and resulting system clock is 4 Mz |
| AS8579 | Capacitive sensor |
| Bypass Caps | Recommended decoupling capacitors |

2.2 Pinout

Figure 6:
AS8579 Adapter Board Pinout

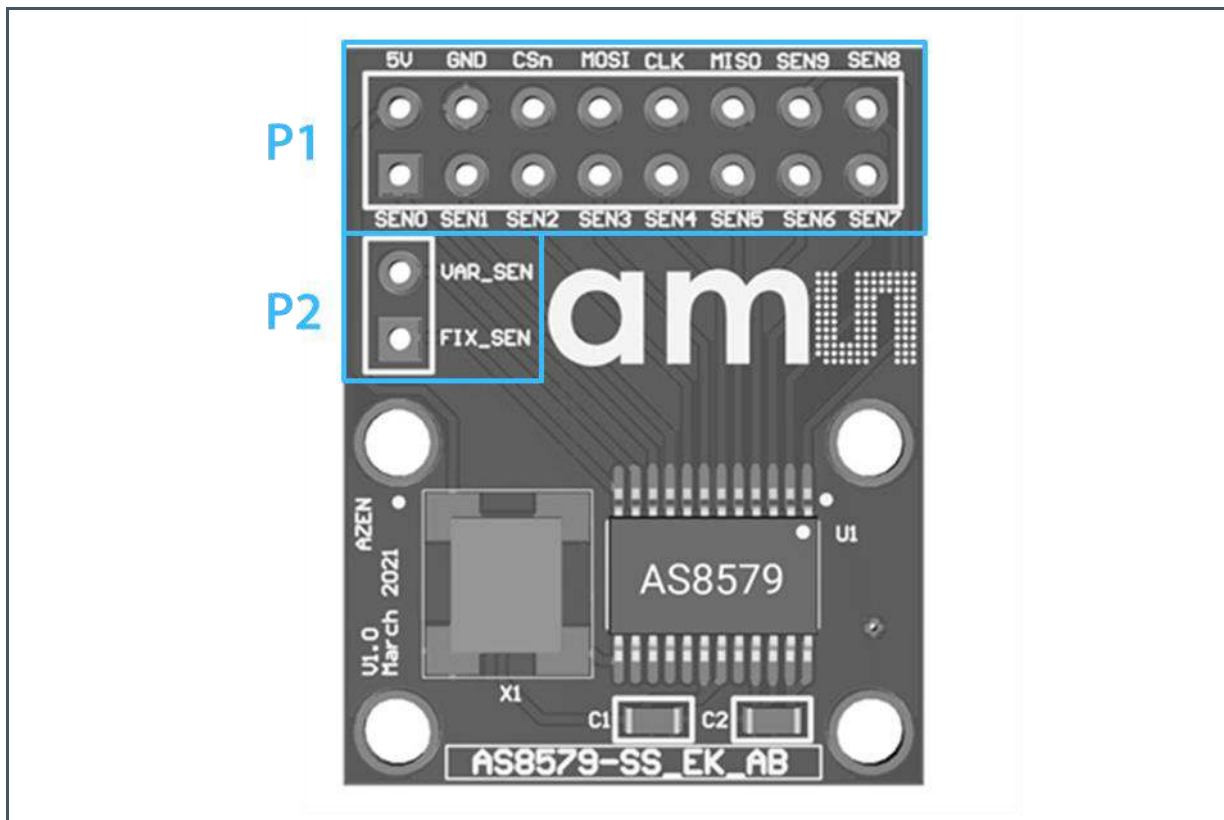


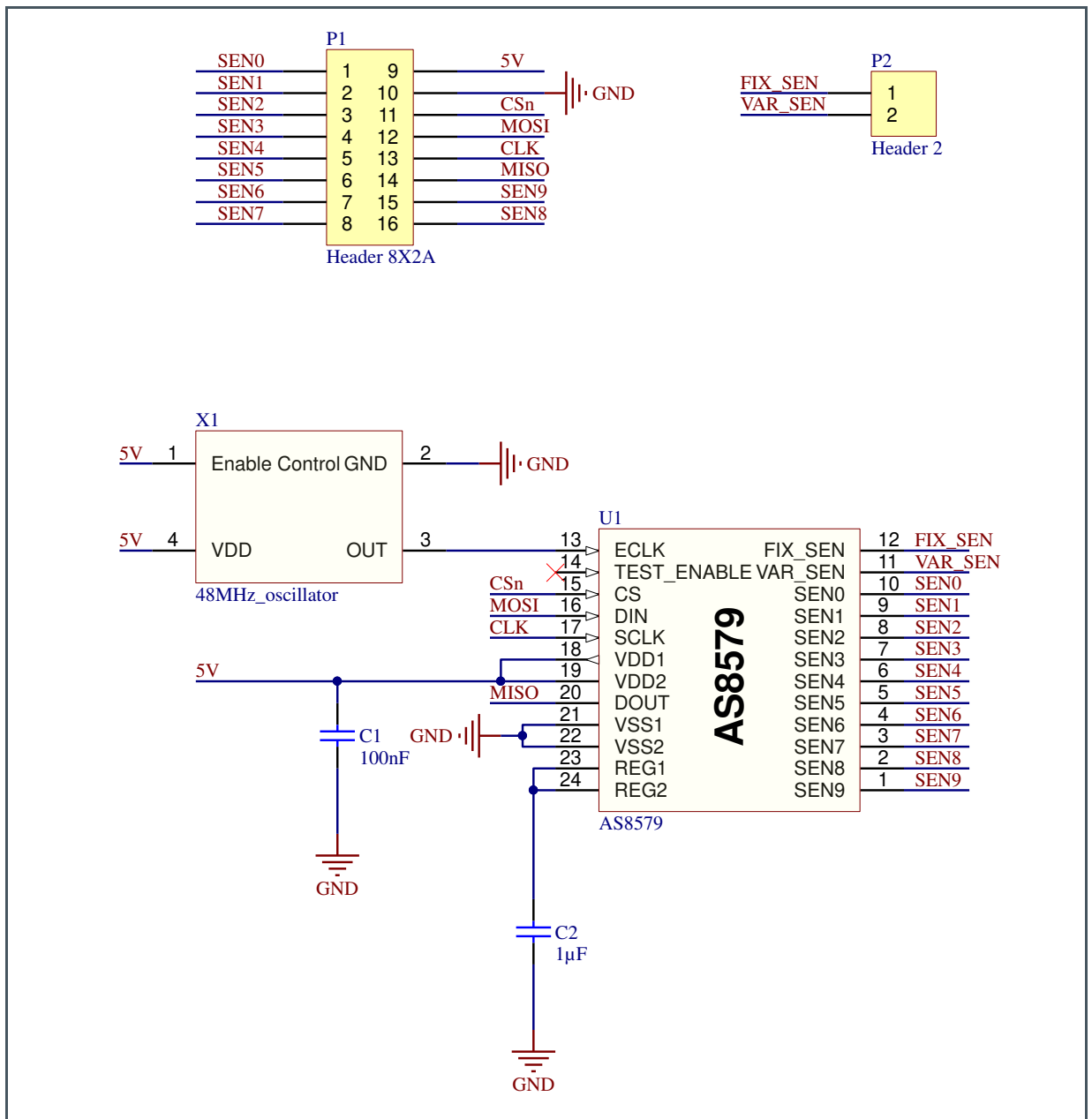
Figure 7:
Pinout

| Pin # | Symbol | Description |
|-------|---------|---------------------------|
| P1-1 | SEN0 | Sensing Lines (0-7) |
| P1-2 | SEN1 | |
| P1-3 | SEN2 | |
| P1-4 | SEN3 | |
| P1-5 | SEN4 | |
| P1-6 | SEN5 | |
| P1-7 | SEN6 | |
| P1-8 | SEN7 | |
| P1-9 | 5V | 5 V supply |
| P1-10 | GND | Ground |
| P1-11 | CSn | SPI – Chip select |
| P1-12 | MOSI | SPI – Master out slave in |
| P1-13 | CLK | SPI – Clock |
| P1-14 | MISO | SPI – Master in slave out |
| P1-15 | SEN9 | Sensing Lines (8-9) |
| P1-16 | SEN8 | |
| P2-1 | FIX_SEN | PCB shielding driver |
| P2-2 | VAR_SEN | Cable shielding driver |

3 Hardware

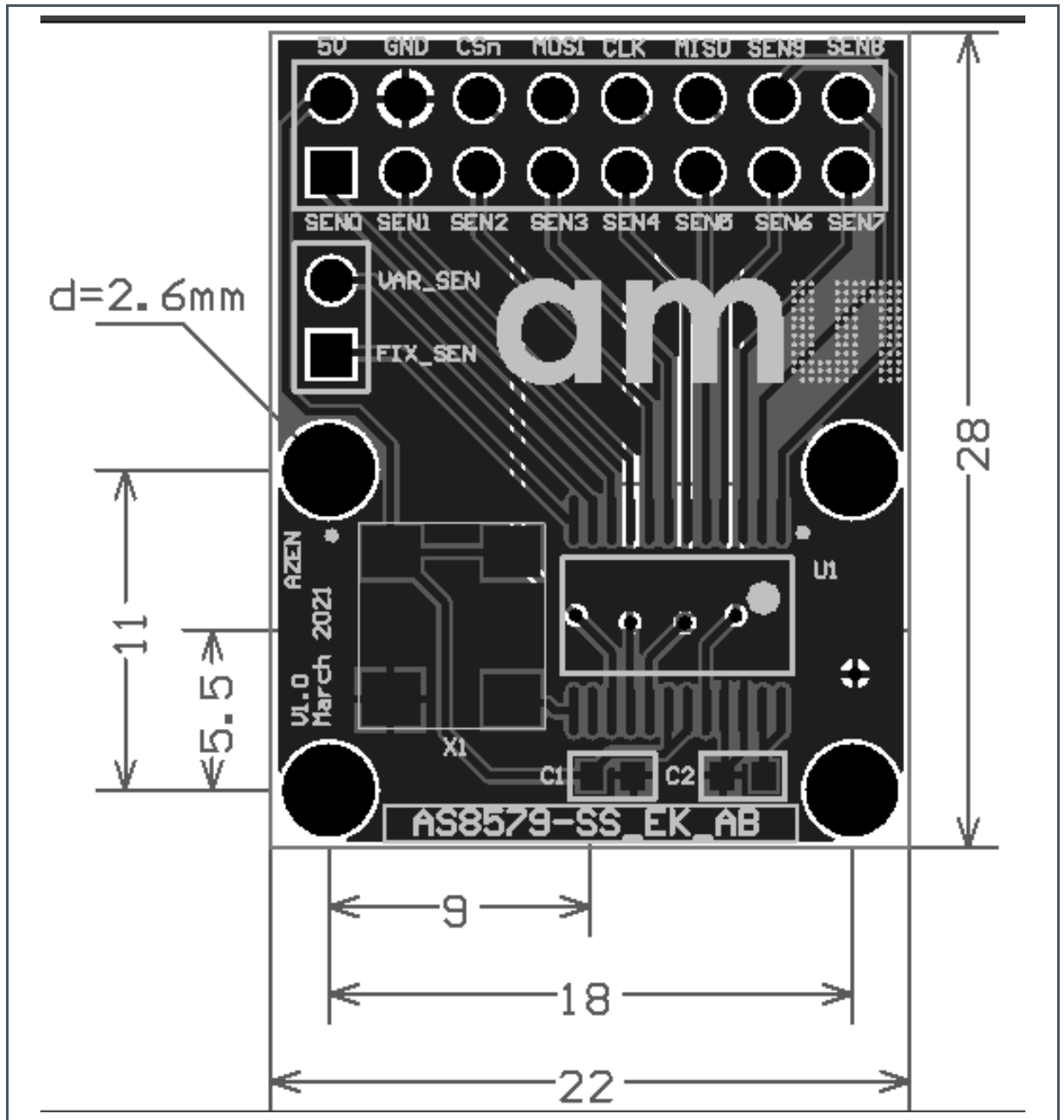
3.1 Schematic

Figure 8:
Schematic



3.2 Layout

Figure 9:
PCB Layout



(1) All dimensions in mm.

4 Revision Information

| Changes from previous version to current revision v1-00 | Page |
|---|------|
| Initial production version | all |

- Page and figure numbers for the previous version may differ from page and figure numbers in the current revision.
- Correction of typographical errors is not explicitly mentioned.

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