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AS7421 Evaluation Kit

Quick Start Guide

26/08/2022

AS7421 Evaluation Kit

Quick Start Guide

AS7421 EVK Contents

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Contents of the AS7421 Evaluation Kit

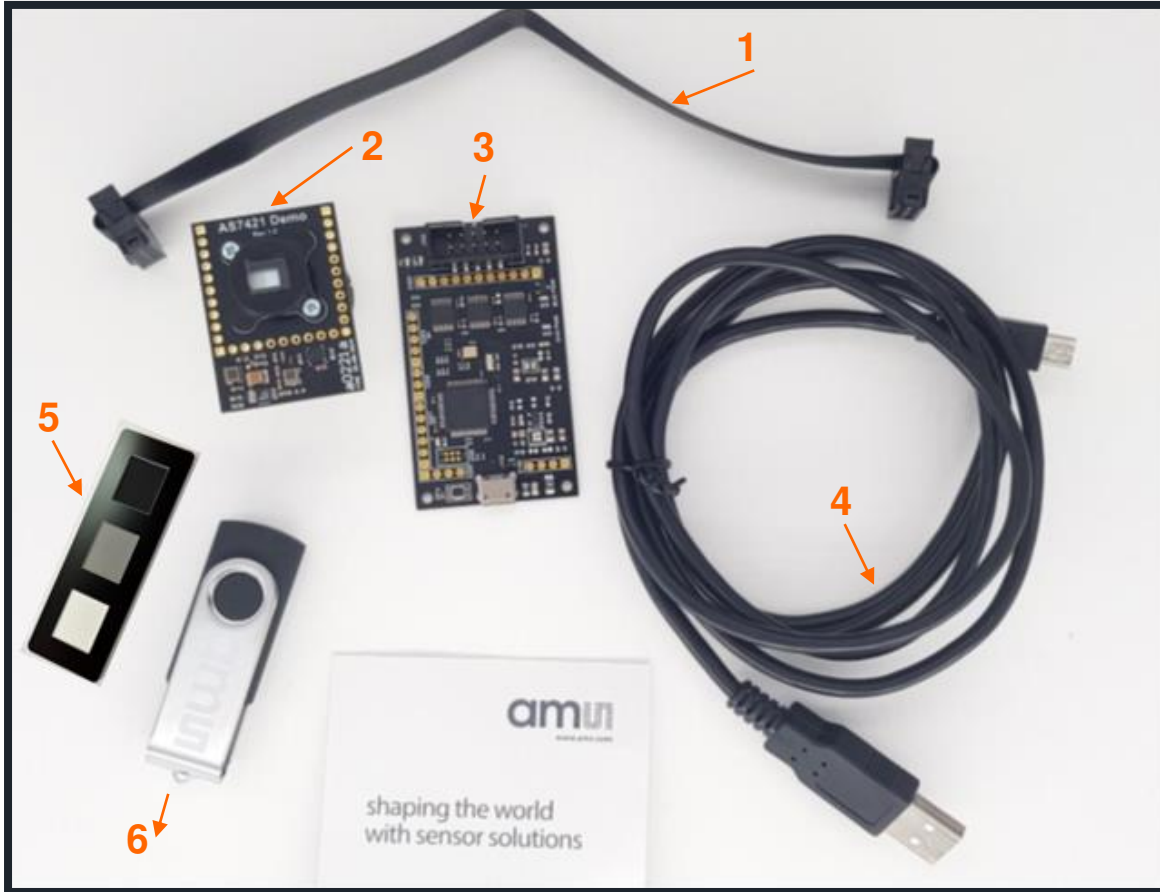## AS7421 Evaluation Kit - Out of the box

Fig. 1: AS7421 Evaluation Kit content

Out of the box

1 – Flex cable

2 – AS7421 Sensor board

3 – Unicom Board

4 – micro USB to USB cable

5 – Reference Target

6 – USB Flash Drive

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Contents of the AS7421 Evaluation Kit

AS7421 Evaluation Kit

The AS7421 Evaluation (Eval) Kit is designed to evaluate all the functions of the AS7421 64-Channel Spectral NIR sensor.

The Eval Kit contains two boards: the AS7421 sensor board (**2** in *Fig. 1*) and the Unicom microcontroller board (**3** in *Fig. 1*). The sensor board is connected to the Unicom microcontroller board via a flex cable (**1** in *Fig. 1*).

The Eval Kit works with a USB connection (**4** in *Fig. 1*) to the PC and comes with a Windows GUI, which enables the user to change measurement settings, perform spectral measurements, and see/export measurement results.

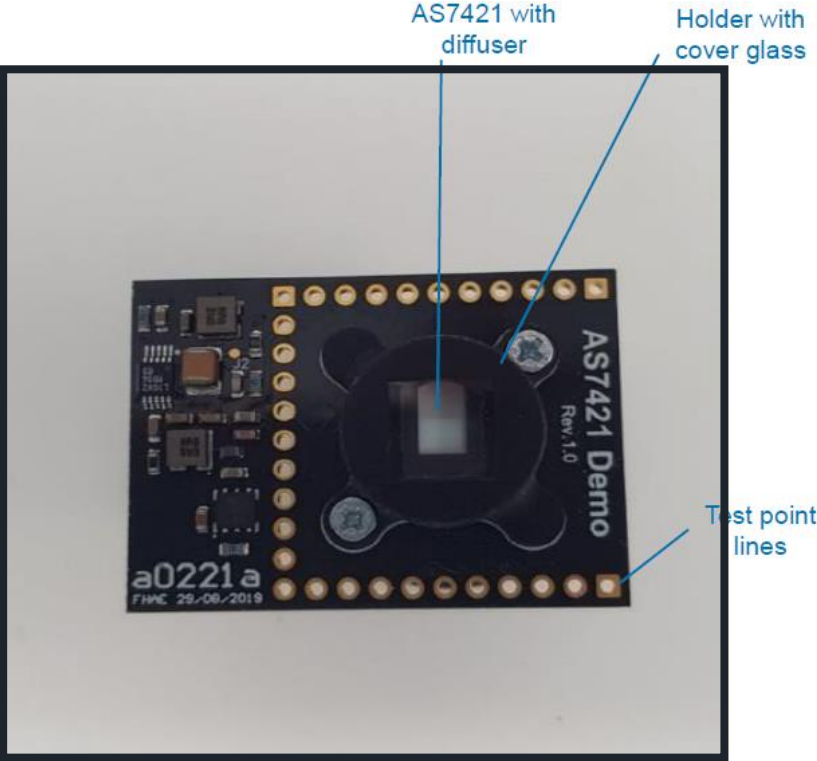The kit comes with firmware flashed on the STM32 ARM Cortex microcontroller.

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AS7421 Sensor Board

Introduction

AS7421 with diffuser

Holder with cover glass

AS7421 Demo Rev.1.0

a0221a
FHAC 29/08/2019

Test point lines

Fig. 2: Top view of the AS7421 sensor board with installed optomechanical parts

Adapter optical bank 16mm / 25mm
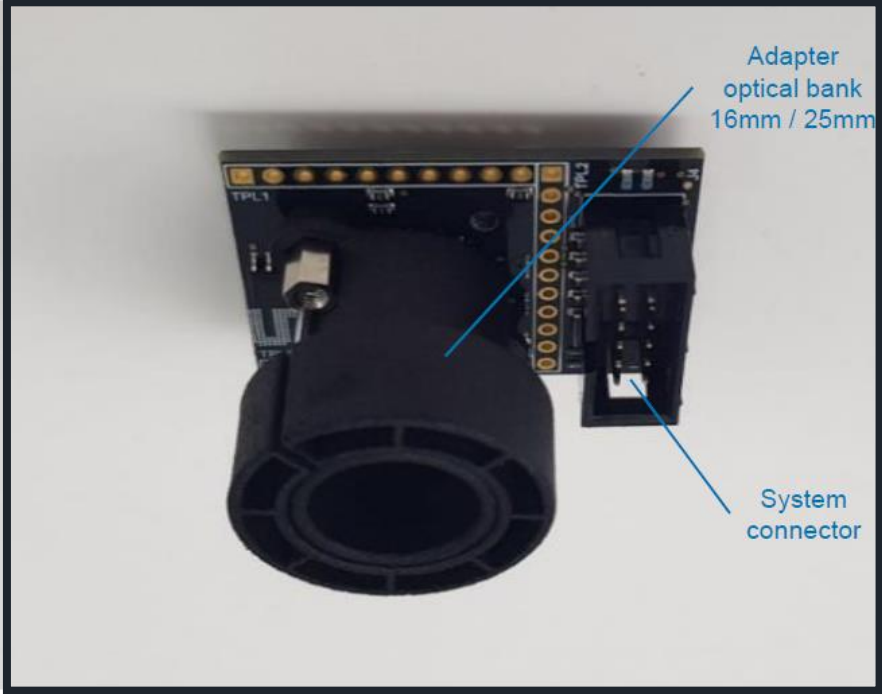
System connector

Fig. 3: Bottom view of the AS7421 sensor board with installed optomechanical parts

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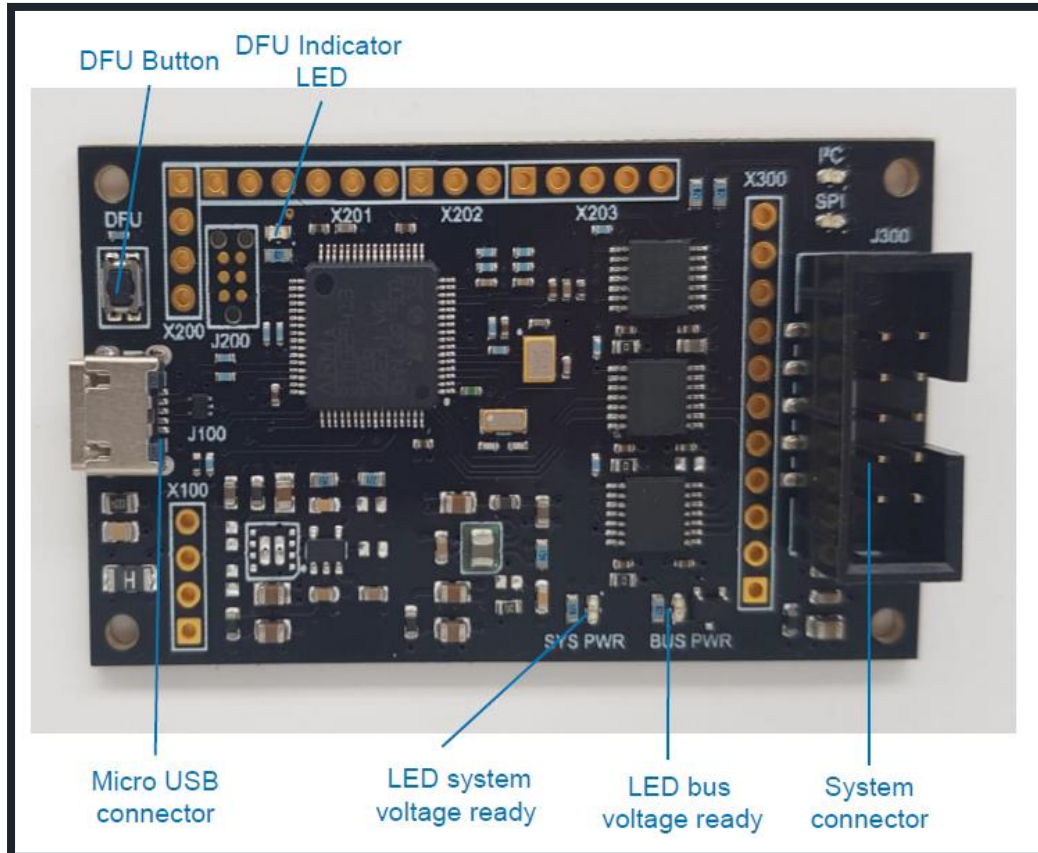
Setup

Getting Started

Fig. 4: Unicom microcontroller board

1. Connect the AS7421 sensor board with the Unicom microcontroller board via the flex cable provided.

2. To install the "AS7421 Windows Demo GUI" software on your computer, start the executable "*Setup.exe*" and follow the installation instructions[1].

3. Then, connect the Unicom microcontroller board to a PC via the micro USB cable.

4. Both green LEDs on the Unicom microcontroller board will light up, signaling a correct operation.

5. Finally, start the Windows GUI on your computer.

1 - If you already have an old Demo software version, please go to the Windows settings, add/remove software, then remove the old version

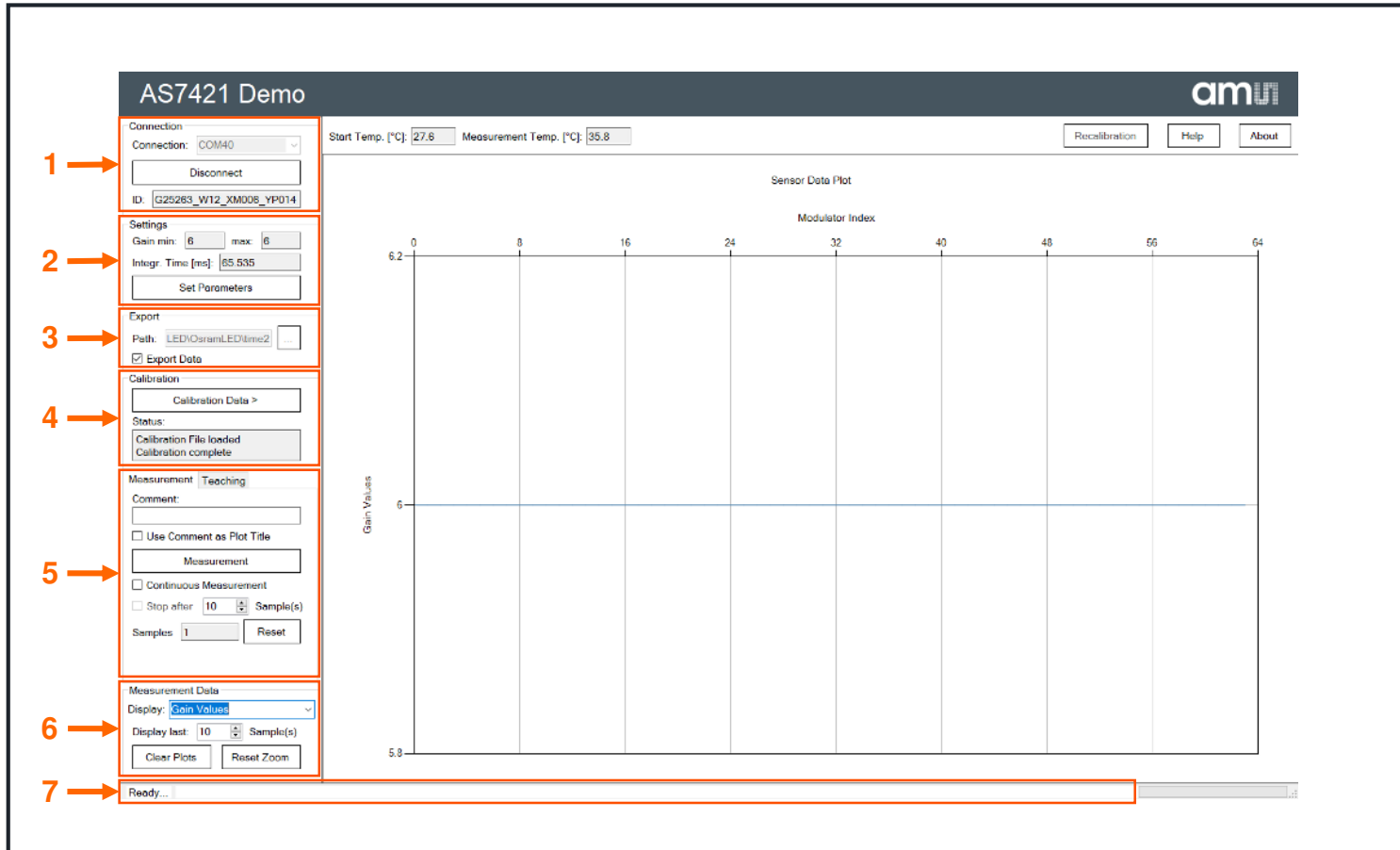ams OSRAM

AS7421 PC Software

GUI Overview – Main menu areas

Fig. 5: AS7421 GUI Overview of the main areas
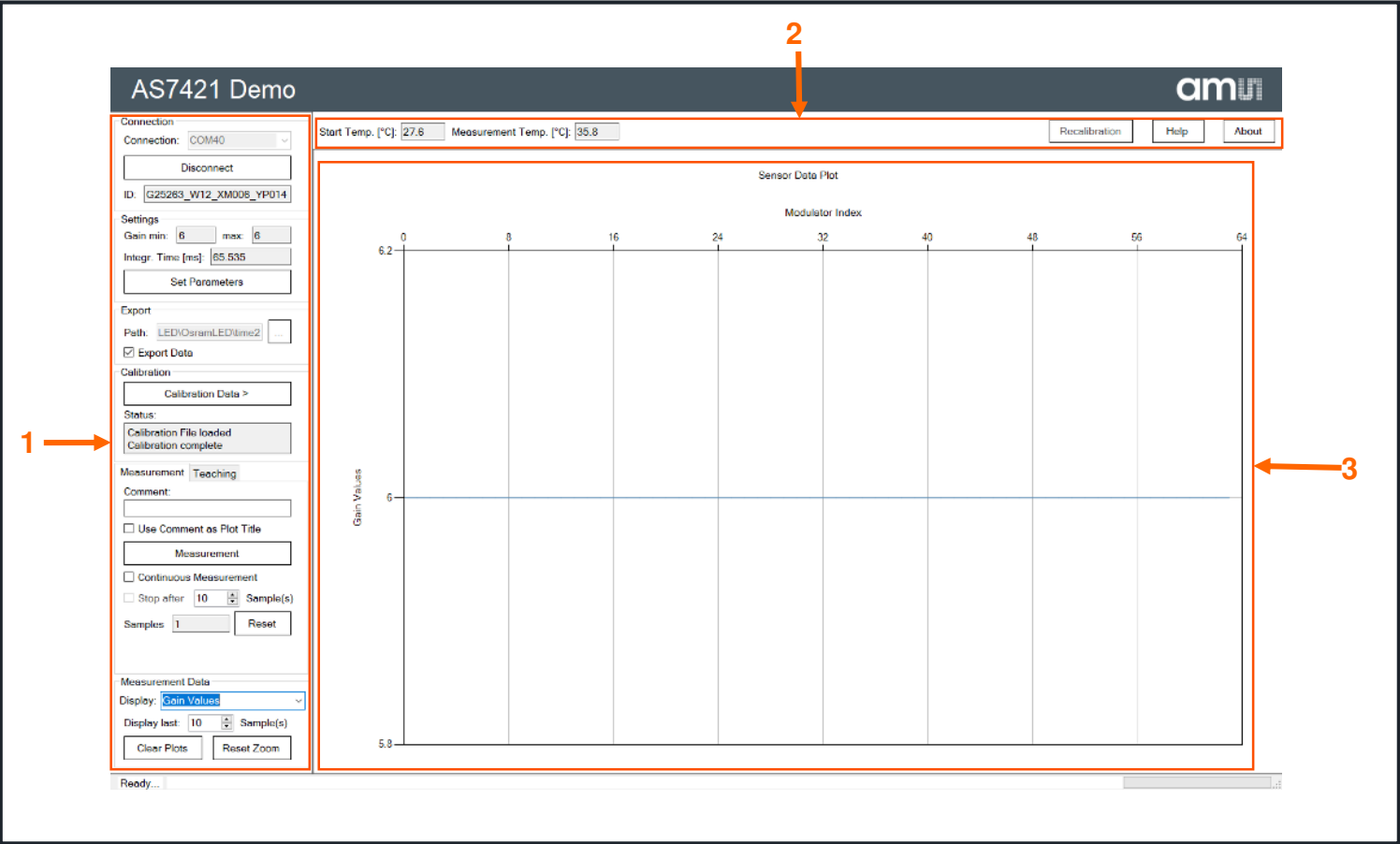
Key

1 – Settings area

2 – Header line area

3 – Plotting area

NOTE: Please refer to the AS7421 User Guide for detailed information on these areas.

AS7421 PC Software

GUI Overview – Settings Area

Fig. 6: AS7421 GUI Overview of the Settings area

Key

1 – Connection tab

2 – Settings tab

3 – Export tab

4 – Calibration tab

5 – Measurement/Teaching tab

6 – Measurement Data tab

7 – Status bar

NOTE: Please refer to the AS7421 User Guide for detailed information on these tabs.

AS7421 PC Software

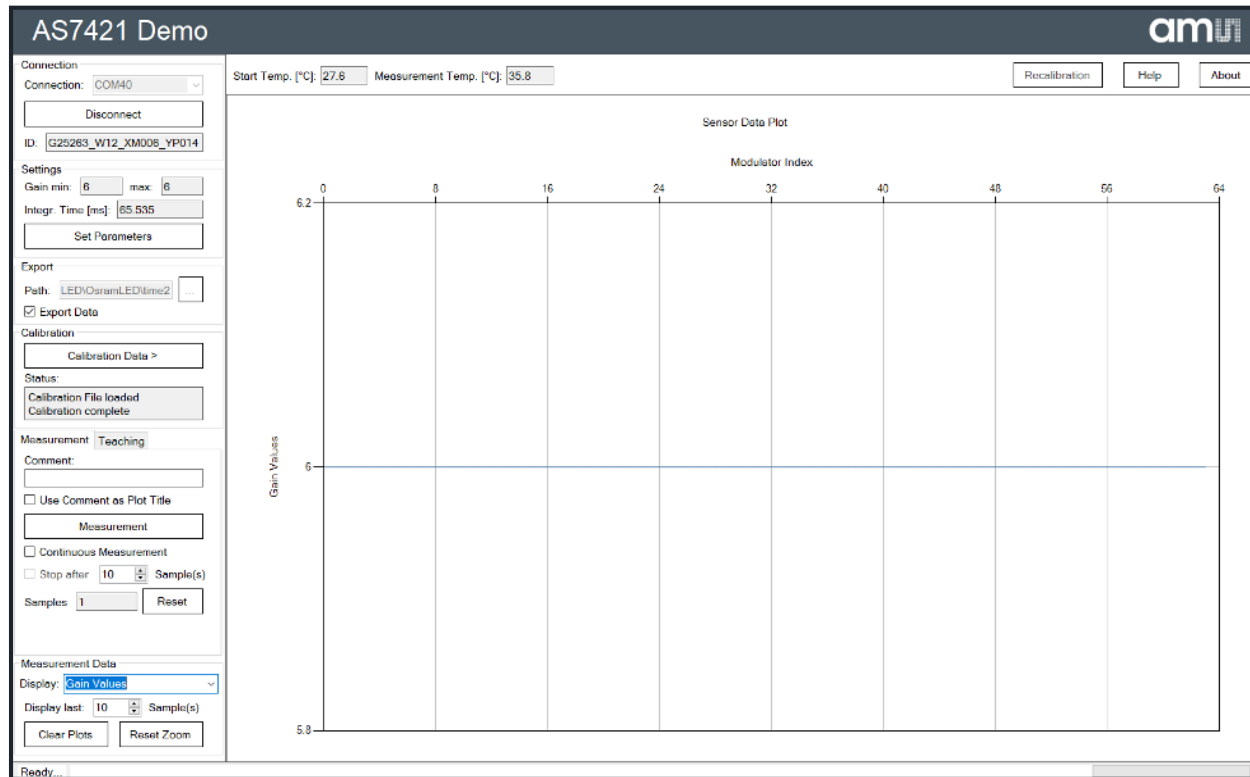## Starting a measurement – connecting the AS7421 Eval board

Fig. 7: AS7421 Demo GUI

1. Firstly, connect the evaluation board to your computer using a micro USB cable according to the procedure from the previous page – the board will register as a virtual COM port in Windows.

2. Afterward, select the correct COM port in the selection box on the upper left corner of the application and click "Connect".

3. The ID field under the "Connect" button will show the unique ID of the AS7421 sensors upon successful connection.

4. When connecting to the sensor board for the first time, the software will ask for an appropriate calibration file. The calibration file is named after the unique ID and can be found on the USB drive, which is part of the evaluation kit. If no matching calibration file is present, please contact ams-OSRAM and provide the sensor board ID number.

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AS7421 PC Software
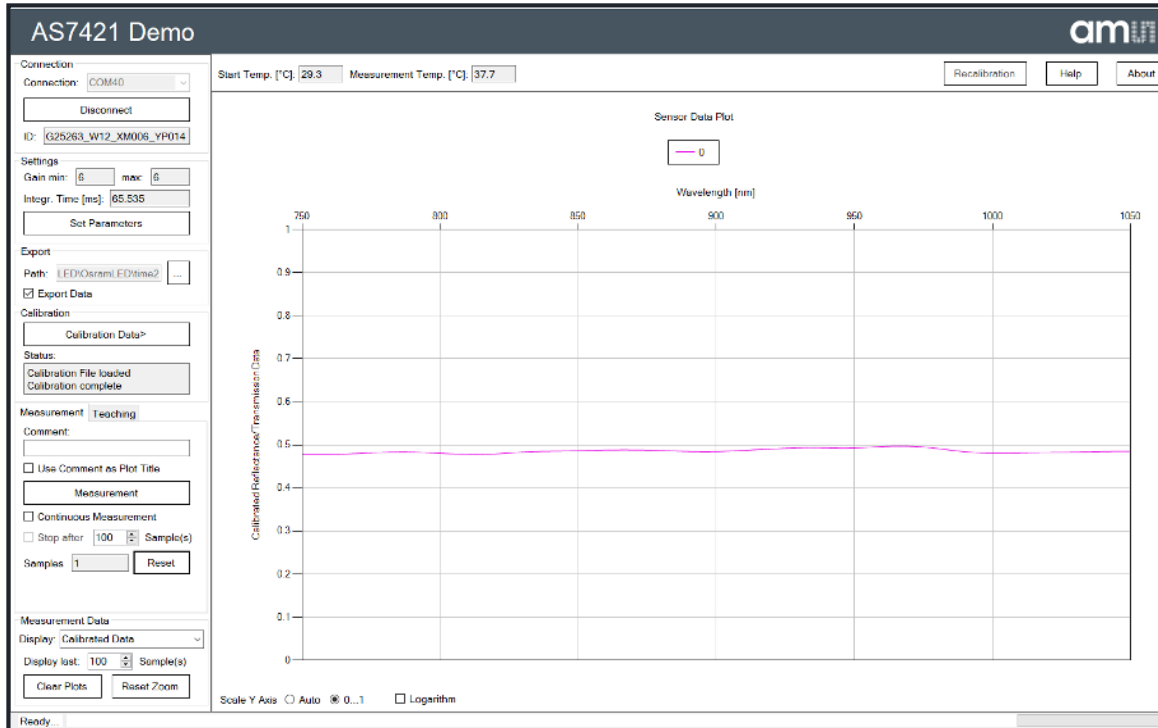
Starting a measurement

Fig. 8: AS7421 Demo GUI with a measurement

5. If the measured data is needed later for evaluation, choose an export path. This saves the data in CSV format.

6. Align the sensor board with the measurement target and choose the desired measurement options, such as continuous measurement, or stop after a desired amount of measurements.

7. Then, click "Measurement" to start the spectral measurement process.

8. Afterward, the software will show the spectrum of the measured target.

9. In the lower-left corner it is possible to choose between different measured spectral data drawings and calculations.

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