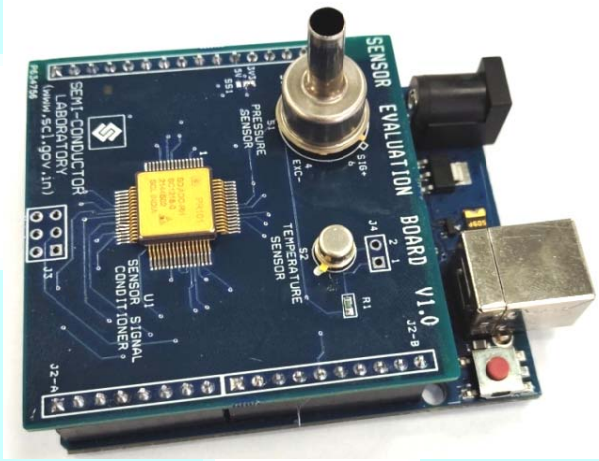
SCL SENSOR EVALUATION BOARD SSEB V1.0

For
Pressure Sensor
Temperature Sensor
& 24-Bit Sigma Delta ADC (SC1218)

Quick Start Guide



Semi-Conductor Laboratory (SCL)
Ministry of Electronics & Information Technology (MeitY),
Government of India,
Sector-72, Industrial Area,
S.A.S. Nagar (Mohali), Punjab

Introduction

SSEB V1.0 is aimed to help students to leans:

- Analog front-end & Sensor Signal Conditioning.
- Calibration & Temperature Compensation algorithm.
- Evaluates their own developed or commercial available sensors
- Develop & Implement their own algorithms.

SSEB V1.0 is aimed to evaluate following components:

- SCL Temperature Sensor (PRT)
- SCL Pressure Sensor (1.5 Bar)
- SCL Readout ASIC SC1218
- Commercially available Piezo resistive Pressure Sensors
- Commercially available PRTs.

To operate EV Board, connect the board to any USB port of a PC/Laptop through USB cable, provided with the kit. EV Board can be used in two ways:

i. Evaluation Mode

ii. Development Mode

Operation Mode	Firmware for SSEB V1.0	Software for PC/laptop
Evaluation	"Firmware_for_Csharp_GUI.ino"	"GUI_Software_Csharp_V1.0.exe"
Development	"Firmware_for_Aurduino_IDE.ino"	"Arduino IDE (Arduino IDE 2.2.1)"

Evaluation Mode

- In Evaluation Mode, a C# based windows GUI "GUI_Software_Csharp_V1.0.exe" will read & display calibrated pressure & temperature data from SCL sensors. C# based GUI software can be downloaded from SCL website.
- SSEB V1.0 comes with factory programmed firmware corresponding to C# based GUI “Firmware_for_Csharp_GUI.ino” for evaluation.

Development Mode

- In Development Mode, user can modify, develop & implement their own algorithms. For development, "Arduino IDE (Arduino IDE 2.2.1) " which can be downloaded from Arduino website https://www.arduino.cc/en/software.
- Corresponding firmware “Firmware_for_Aurduino_IDE.ino” should be loaded first & modify calibration coefficients to see the corrected output on serial monitor of Auduino IDE.

Kit Details

S. No.	SCL Sensor Evaluation Board (SSEB V1.0) Kit Details	
1	SSEB V1.0 Box contains assembled Board with following parts designed & developed by SCL	
	1a	Pressure Sensor (S1)
	1b	Temperature Sensor (S2)
	1c	Sensor Signal Conditioner (U1)
	1d	Mounting Connectors compatible with Arduino UNO board J1 & J2 (J2-A & J2-B)
2	Arduino UNO R3 Board	
3	USB interface data Cable	

Downloads

S. No.	Available downloads	Links
1	Firmware for C# based GUI **"Firmware_for_Csharp_GUI.ino"**	**https://www.scl.gov.in/sys_dev.html** SCL Home Page ➢ SCL Facilities ➢ System Development 
2	C# Based GUI software **"GUI_Software_Csharp_V1.0.exe"**	
3	User Operational Manual	
4	Sensor & IC Datasheets	
5	Un-boxing demo Video	
6	Firmware for Arduino IDE **"Firmware_for_Aurduino_IDE.ino"**	
7	Software Arduino IDE (Arduino IDE 2.2.1 or latest)	**https://www.arduino.cc/en/software**

Contact Details:

Sachin Sharma, Head MTAD/EFTG **sachins@scl.gov.in** **(0172) - 2296356, 2296378**	**Gurvinder Singh, Group Head EFTG** **gh_eftg@scl.gov.in** **(0172) – 2296301**