# CS40L25 I2C stream Demo Guide

## Introduction

This document details all the software and hardware configuration required to run the i2c streaming demo on the Lochnagar 2 applications platform and a CS40L25/CS40L25B mini board. Only Lochnagar 2 is supported.

Each Cirrus Logic Haptics Control software release contains CS40L25/CS40L25B firmware, WISCE™ Haptic Control plugin, supporting documentation and configuration scripts for the Lochnagar 2 development system. Please contact your Cirrus Logic Representative to obtain the latest Haptics Control software release.

## Table of Contents

# 1 Hardware

The Cirrus Logic Haptics applications system consists of two boards. The CDB6271-EV2 Lochnagar 2 Applications Platform Main Board provides connectivity, clocks and power to a CS40L25 mini-board.

Three variants of the CS40L25 mini-board are available:

1. CDB40L25-M-1 Rev 1 with CS40L25 CSP device.
2. CDB40L25-M-1 Rev 1 with CS40L25B CSP device.

Installation of the mini-boards follows the same procedure and control scripts recognise which device is fitted in order to perform the correct initialisation. Users need only one mini-board pertaining to the device variant used in their final product.

This section shows how to connect the hardware components.

## 1.1 Required Hardware

The following items of hardware are required:

- Applications Platform Main Board: “Lochnagar 2” (Cirrus Logic part number CDB6271-EV2).
- USB cable for PC communication.
- External 5V 5A DC supply.
- CDB40L25-M-1 mini-board with either a CS40L25 or CS40L25B device.
- LRA
- Oscilliscope.

## 1.2 Hardware Configuration

The hardware set-up for i2c streaming demo is Figure 1. The mini-board mounts on top of the Lochnagar 2 Applications Platform Main Board through three keyed connectors. The Lochnagar 2 provides a USB connection to the user’s PC.

The Lochnagar 2 board provides 32.768kHz and 12.288 MHz clocks and power supplies for the mini board.

Two power supply options are available:

1. Connect an external 5V 5A DC supply to the Lochnagar 2 Wall Power connector J18 highlighted blue in Figure 1.

**An external power supply must always be connected to the Lochnagar 2 board to avoid drawing excessive power through the USB port.**

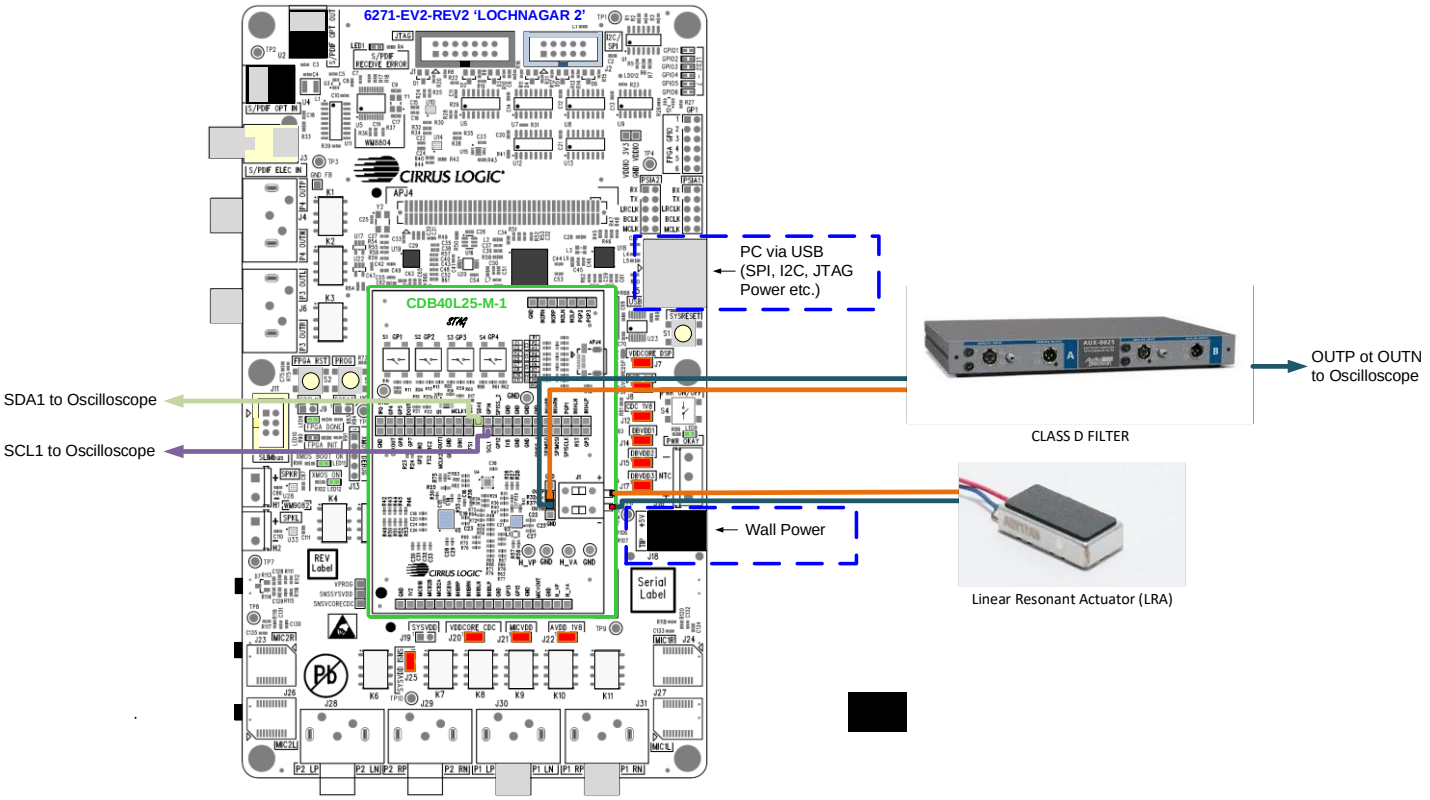



**Figure 1: Hardware Set-up**

# 2 Software Installation & Configuration

Cirrus Logic Haptics Control software operates within the Cirrus Logic WISCE environment. This section describes the software installation steps and files. Configuration details for the Windows CLUSB Audio device that connects the WISCE software to the Lochnagar 2 hardware are provided.

Please refer to section **Error! Reference source not found.** for debug guidance and to your Cirrus Logic representative if the software does not install or operate correctly.

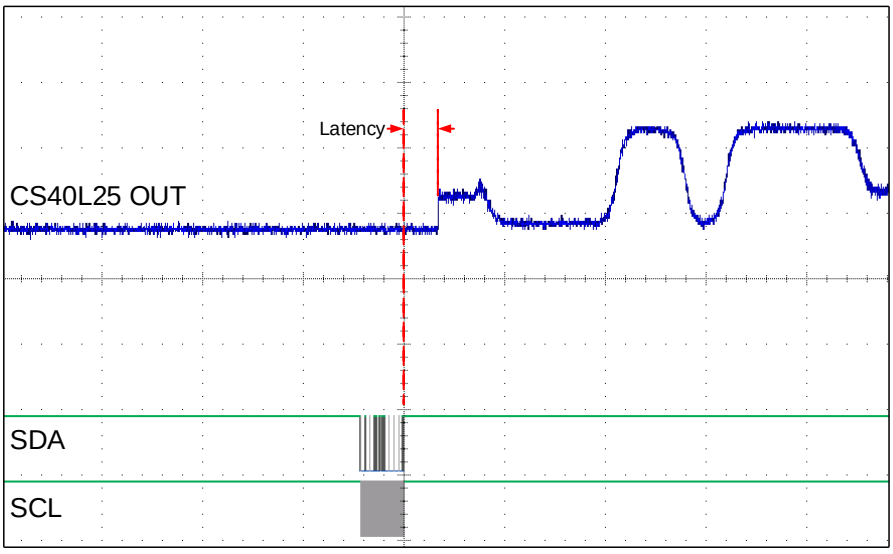
## 2.1 WISCE & Device/Board Packs

Six software components must be installed. Run the installer programs in the order shown below:

1. WISCE™ 3.12.0.3 or later
   a. Download installer from https://www.cirrus.com/support/wisce/
2. Lochnagar 2 WISCE Device Pack version 1.4.2.155 (or later)
   a. Download installer from https://www.cirrus.com/support/lochnagar/
3. CDB40L25 mini-board device pack for WISCE
   a. File ***CDB40L25-M-1_BoardSetup_RevA_1_0_67.exe***
4. CS40L25 Firmware installer
   a. File ***FW_Prince_HapticsControl_kit_99.0.0.exe***
5. CS47L35 Firmware installer
   a. File **FW_Marley_HapticsControl__NI_Standalone_kit_010705.exe**

# 3 CS40L25 I2S Stream Demo

## 3.1 Demo Setup Sequence

1. Ensure the Lochnagar 2 board is connected to PC
2. Connect power to Lochnagar
3. Ensure the PWR_OKAY and FPGA_DONE LEDs are lit
4. Start WISCE™
5. WISCE should load the ***CS47L35*** and ***CS40L25*** control GUI automatically. If not, manually load the device description file to WISCE™:
    a. Device → Load Definition
        i. Select ***CS47L35_RegMap_RevA.wxd***
    b. Device → Load Definition
        *i.* Select ***CS40L25_RegMap_RevB1.wxd*** or ***CS40L25B_RegMap_RevB1.wxd***
6. Run the set-up file ***Start_Haptics_DF0_CLAB_with_Tuning.txt*** in WISCE™:
    a. File → Load → Profile
    b. File location:
        *i. C:\Program Files (x86)\Wolfson Evaluation Software\Profiles\FW_Prince_HapticsControl\CDB40L25-M-1*
7. Run the following file ***i2c_stream.txt*** in WISCE™ to stream a waveform via I2C
    *a.* This file is provided in the ***I2S Stream Demo.zip***
8. The Latency should be measured from the last I2C transaction before the Haptic playback to the start of the Haptic Playback
9. 

# 4 Revision History

**Revision History**

| Revision | Changes |
|---|---|
| 1.0<br>JUL 2020 | • Initial version. |
| | • |

## Contacting Cirrus Logic Support

For all product questions and inquiries, contact a Cirrus Logic Sales Representative.
To find the one nearest you, go to www.cirrus.com.