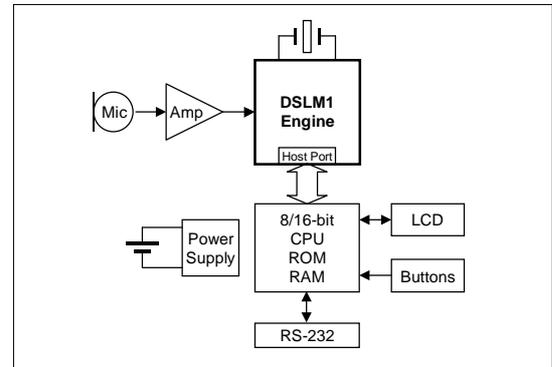


**DSL1 BASIC DIGITAL SOUND LEVEL METER DSP ENGINE****GENERAL DESCRIPTION**

DSL1 DSP Engine is an advanced signal processing module for a modern, all-digital, low-power and very high precision basic sound level meter.

A typical IEC651 Type 0, IEC804 Type 1 basic sound level meter consists of a precision electret microphone, a high dynamic range, low-noise pre-amplifier with possible overlapping 100/110 dB measurement ranges and the advanced DSL1 DSP Engine module (Figure 1). The system has the dynamic range of 100/110 dB over full audio spectrum 10 Hz - 22 kHz.

The 8/16-bit host microcontroller interfaces to the DSL1 via an 8-bit host port interface. The user controls instrument operation by the push buttons, and the measurement data is displayed on the graphical or character-based liquid crystal display (LCD). The measurement data can also be stored into a battery backed-up non-volatile RAM or Flash data memory. The data memory contents may be downloaded into a laptop or desktop personal computer for further analysis using a standard RS-232 serial port interface.



**Figure 1. Modern IEC651 Type 0 / IEC804 Type 1 sound level meter application using the Xelentix's advanced DSL1 DSP Engine**

**PRODUCT HIGHLIGHTS**

State-of-the-art, very high precision digital signal processing algorithms and technology:

- Meets IEC651 Type 0 and IEC804 Type 1 requirements
- Measurement resolution 0.1 dB
- Full audio frequency range 10 Hz - 22 kHz
- Two audio input and two audio output channels
- Interfaces easily to a high precision electret microphone preamplifier and a DAT recorder
- Wide dynamic range of 100/110 dB including the crest factor of 10 (20 dB)
- Easy to manufacture and use: No filter or time constant calibration needed
- Low cost solution for a modern, very high precision, all-digital sound level meter

Many simultaneous real-time measurements:

- A-Weighted Peak, Slow and Fast time constants or
- Linear Peak, Slow and Fast time constants

Electrical characteristics:

- Maximum input signal level 2 Vp-p
- Low power CMOS design: typ. 100 mA/3.3 V and 50 mA/5 V

Other features:

- Very small footprint: 3.5 cm x 4 cm x 1 cm (1.4 in x 1.5 in x 0.4 in) W x D x H
- Interfaces easily to all popular 8/16-bit commercial microcontrollers
- Linear and semi-logarithmic output data formats for very fast and easy data processing
- Free portable ANSI C source code available for host interface communications

This document contains preliminary product information. The information herein is subject to change without notice. Please visit our Web site [www.xelentix.com](http://www.xelentix.com) for the latest product information.

FUNCTIONAL BLOCK DIAGRAM

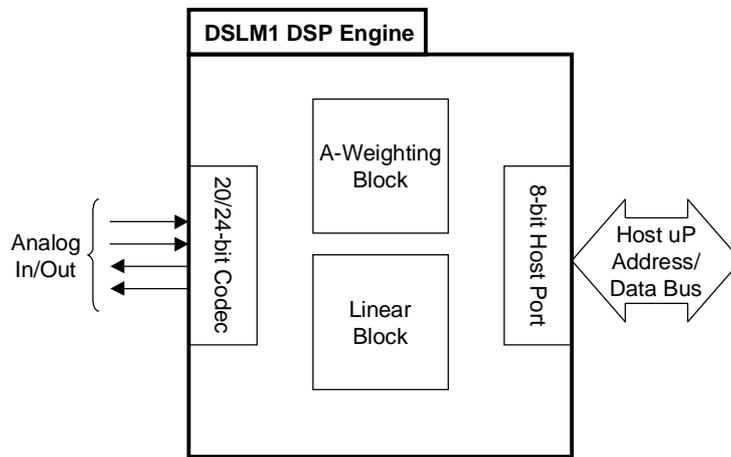


Figure 2. Functional block diagram of the Xelentix's advanced DSL1 DSP Engine

MODULE DIMENSIONS

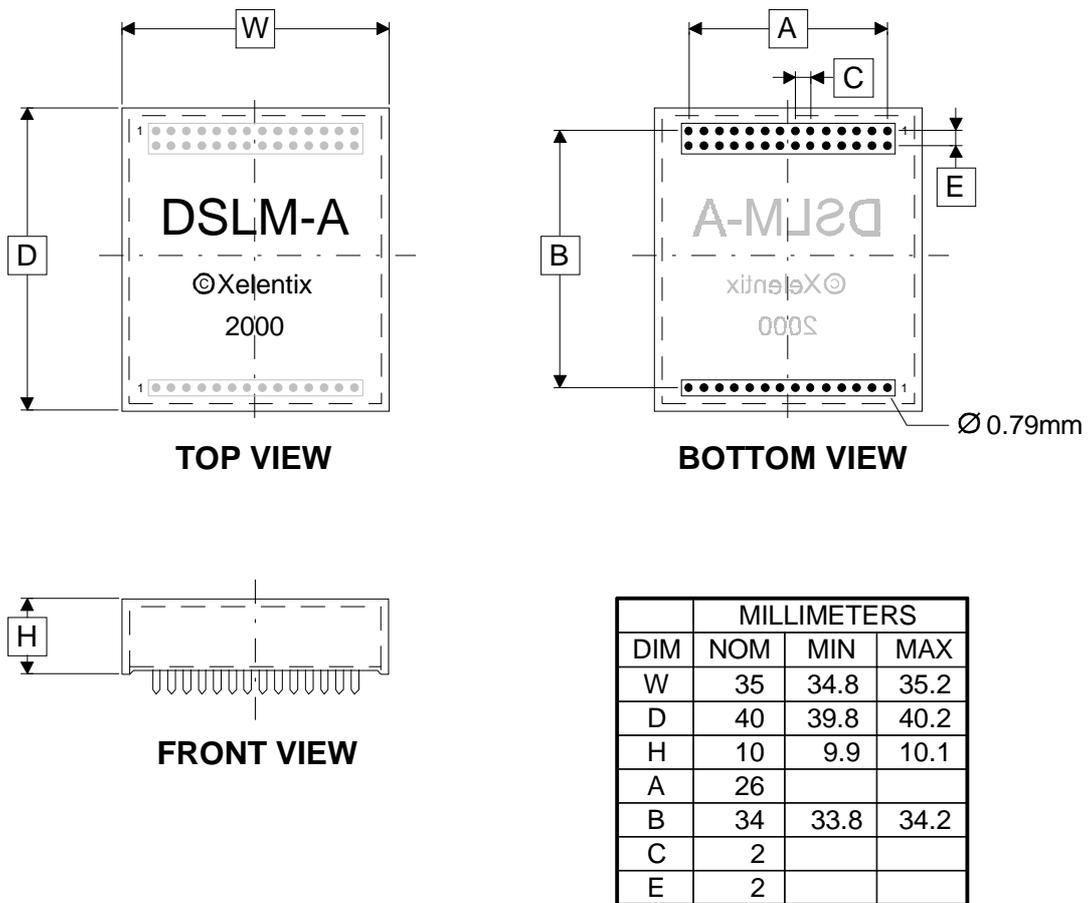


Figure 3. Module dimensions