HS-100B

Demo Board User Manual

Version: 1.0

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Revision Notes

Revision	Date	Description
1.0	2013/09/23	First formal release

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SECTION 1 OVERVIEW

1.1 Introduction

Cmedia's HS-100B is highly-integrated USB audio single chip optimized for consumer headset solutions. This document is a user guide for the demonstration boards (demo boards) of HS-100B, which describes the board's functions, I/O jacks, LEDs, controls and some user notes.

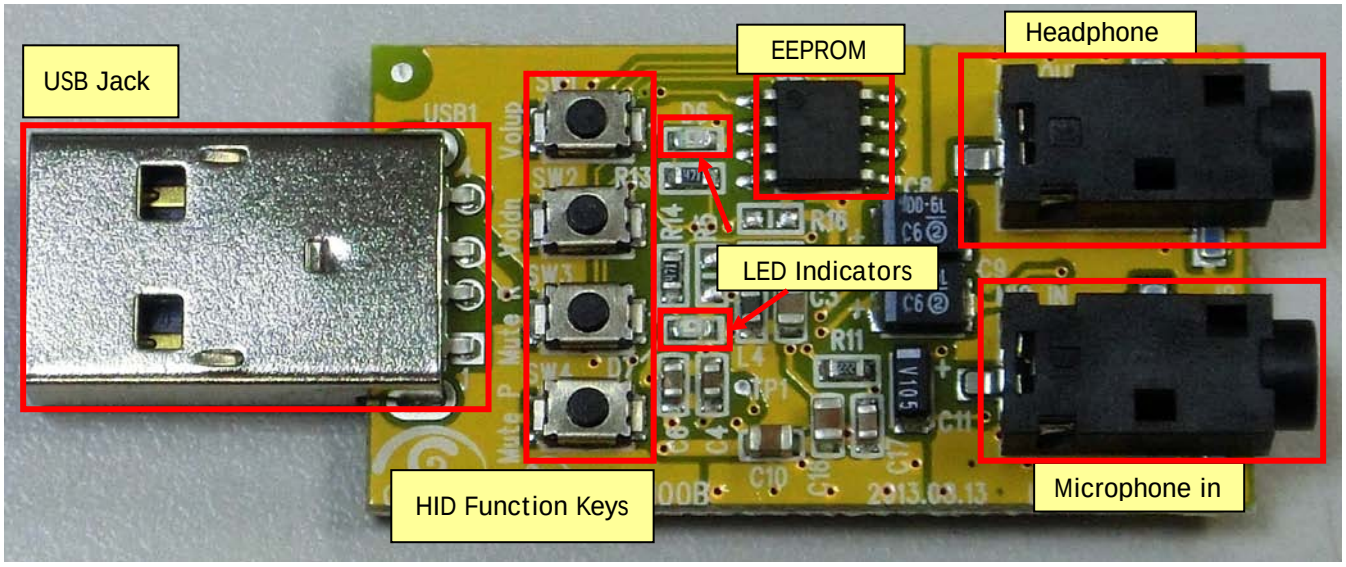
HS-100B supports standard HID compliant volume control pins and playback mute/ recording mute, and it also offers playback operation and playback/record mute LED indicators in order that users know the current status.

All necessary analog and digital modules are embedded in HS-100B, including stereo DAC, headphone driver, Mono ADC, microphone pre-amp booster, PLL, regulator, and USB transceiver.

In addition, internal cost effective embedded oscillator generates steady clock signal for the operating clock, so the system designers of the products can reduce the BOM cost by eliminating the crystal oscillator and the necessary circuit around it. End users will get good sound experience either on PC or on game console.

1.2 Evaluation Board Contents

The HS-100B controller demonstration board has several hardware features. With each feature's description in Figure 1, the feature's location can be clearly identified.



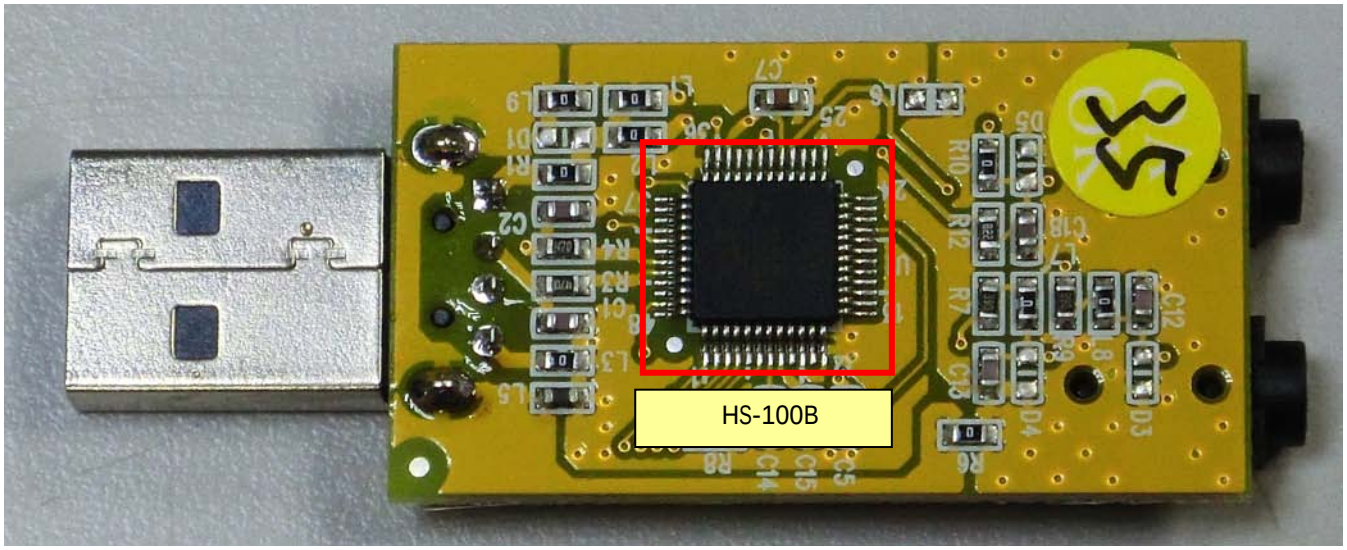


Figure 1

SECTION 2 GETTING STARTED

2.1 Board as USB Audio Device

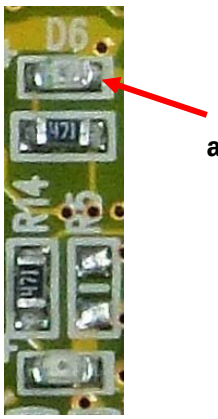
1. Connect the demo board to the host PC by plugging the USB Jack into host's USB port, as shown in Figure 2

A type USB connector

Figure 2 USB connector

2. Check LED "STATUS" for power-on and current status, as shown in Figure 3.

When the device is connected, the STATUS LED lights still, and when playing/recording, the STATUS flashes.



Power ON/OFF and current status

Figure 3 LED indicators

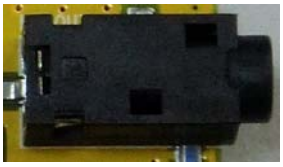
2.2 Playback / Recording Functions

2.2.1 Playback Functions

HS-100B's playback function includes dual DAC and an earphone driver. The capabilities of playback are listed below.

Device	Audio Out Capability
HS-100B Analog Output	Stereo (2 channel) 48KHz/44.1KHz sampling rates with 16bit Resolution

Headphone Output



Headphone out

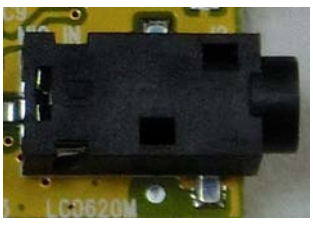
Figure 4 Headphone out jack

2.2.2 Recording Functions

HS-100B's recording function supports single channel multiple sampling rates with 16-bit resolution. The capabilities of recording are listed below.

	Audio In Capability
HS-100B Analog Input	Mono 48KHz /44.1KHz sampling rates with 16bit resolution

Microphone Input



Microphone In

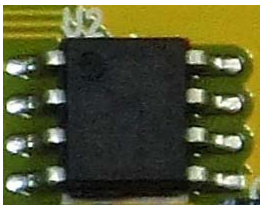
Figure 9 Microphone input jack

2.3 Evaluation Board with peripheral Control

HS-100B embedded external peripheral control and IO pins.

- EEPROM Interface
- HID Buttons
- LED Indicators

2.3.1 EEPROM Interface



The EEPROM on the EVB

Figure 10 EEPROM Interface

2.3.2 HID Buttons

Symbol	Description
Volup	HID Playback Volume Up
Voldn	HID Playback Volume Down
Mute R	HID MIC REC Mute
Mute P	HID Master Volume Mute

2.3.3 LED Indicators

LED	Description
STATUS(D6)	Status note indicator
MU-REC(D7)	Microphone mute indicator

Status Indicator LED: When device is powered and enumerated by the host, the LED lights still. When playback or recording is operating, LED flashes. When both playback and recording are operating, LED flashes fast.

MU-REC LED: When recording is mute, the LED lights still.