

VIA Debian 4.0 Linux HD Audio Driver Installation Guide

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1. Summary

This document describes how to install the audio driver for HD audio controllers in VIA south bridge chips VT8237A/S, VT8251, CX700(M/M2), and VX700(M/M2) HD audio codec VT1708A in Debian 4.0. For other users who don't use the default kernel of Debian 4.0, please refer to the [VIA HD audio driver installation guide](#) in VIA Arena and then rebuild the driver manually. The information in this document is provided "AS IS," without guarantee of any kind.

2. File description

This package requires 2 files as described below.

VIA-HDA-v1.40-Debian4.0_bin.tgz	66,016	06/13/2007 07:20pm	VIA HD Audio Driver
Readme			this file

3. Prior to installation preparation

Due to the VIA HD Audio codec VT1708A cannot be recognized correctly by the default kernel in Debian 4.0, users have to unload the related drivers before installing the new binary package. Please make sure the sound card is no longer in use by any sound related applications. Users can run the "#lsmod" command to confirm whether the audio driver is loaded and remove the audio driver by the following steps.

```
# modprobe -r snd-hda-intel (or snd-via82xx)
# rmmod `lsmod|grep snd`
```

Note: To prevent the issue of PCI devices cannot be found in some newly MBs with VT8237A/S/VT8251/CX700(M/M2)/VX700(M/M2) chips, please add the "pci=conf1" parameter into the boot configuration file.

Also, the P-IDE DMA mode of CX700(M/M2), VT8237S and VX700(M/M2) is not enabled by the default kernel. So users have to use the following package to enable.

VIA-IDE_Patch-Debian4.0-20070612.tgz

4. Install pre-compiled HD Audio driver

Run the commands below with "root" users to install the HD audio driver.

```
# tar xzf VIA-HDA-v1.40-Debian4.0_bin.tgz
# cd VIA-HDA-v1.40-Debian4.0_bin
# ./install.sh
Backup original HD audio drivers.
```

Install VIA HD audio drivers.
Installation completes !!
Please reload the snd-hda-intel.

After installation, please make sure the original drivers have been unloaded. Then re-load the driver. Note that the default volume might be muted, so please adjust the volume by the mixer tool (such as: alsamixer). The VT1708A HD audio codec supports 8-channel audio output. Users can verify this function with 8-channel audio source by mplayer.

5. Driver features

The following table shows the test results of the driver features.

Motherboard (Chip)	VCD	DVD	CDDA	MP3	WAV	MIDI	RM	Audacity Recorder		SPDIF
								Line-In	MIC	
VT8498B-1 (VT8237S)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
VT5935C-4 (VT8237A)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
VT8454C (CX700M)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS

Note: Most test applications were installed by using “*synaptic*” except “*realplay*”.

Mplayer is for VCD, DVD, CDDA, MP3 and WAV test.

Timidity is for MIDI test.

Audacity is for recording test

Realpay (RealPlayer10GOLD.bin) is for RM/RMVB test. (<http://www.real.com/>)

(1) Play the midi file, users may meet lag issue. Please use command

```
# timidity <mediafile> -Od -EFverb=d -EFresamp=d
```

(2) Play the record file, and the output sound with noise. (H/W Limitation, please refer to the Trouble Shooting 1)

(3) Record sound form source “Line-In”/“MIC-In”..., but there is no sound output.
Please select item “Input Source->Stereo Mixer (or MIC/Front MIC/Line/CD)” from mixer tool.

6. Test configuration

The following configurations were used for test.

Mother Board	VT8498B-1 (K8M890+VT8237S+VT1708A)	VT5935C-4 (CN896+VT8237A+VT1708A)	VT8454C (CX700M+VT1708A)
CPU	AMD Athlon64 4000+	VIA C7 2GHz	VIA C7 2GHz
Memory	512MB DDR2 RAM	512MB DDR2 RAM	512MB DDR2 RAM
HDD	Seagate ST340824A 40GB	Seagate ST340824A 40GB	Seagate ST340824A 40GB

Trouble Shooting

(1) Recording sound via VT1708A Codec, with sample-rate parameters of 44.1KHz, 22.05KHz and 11.025KHz. Play the recorded file, and users can hear obvious fizzy noise.

→ The VT1708A only support 48KHz for recording. When recording at 44.1KHz, 22.05KHz and 11.025KHz sample rate, the ALSA kernel module will do sample rate conversion. Use “**aoss**” script for OSS emulation. The “**aoss**” script is included in **al sa-oss** package. It’s an alternative OSS emulation method of ALSA.

a. Download **al sa-oss** package by using “*synaptic*”.

b. Use “**aoss**” for applications. For example, users can use command:

```
# aoss audacity
```

Or, record with 48KHz sample rate.