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Analog Devices, Inc., Sound Processing Team

Microsoft Windows NT 3.51/4.0 Device Drivers  
AD1815/16(A) SoundPort Controller

February 20, 1998 Modification Date

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CONTENTS

- I. Overview
- II. System Requirements
- III. Included Files
- IV. Configuration Instructions
- V. Installation Instructions
- VI. Troubleshooting

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I. OVERVIEW

This README.TXT contains instructions to install and configure the Microsoft Windows NT driver for the AD1815/16(A) SoundPort Controller.

This release provides Microsoft Windows NT 4.0 and Windows NT 3.51 drivers for 1815/1816/1816A products. Hereafter, WinNT refers to both Windows NT 4.0 and Windows NT 3.51 unless otherwise stated.

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II. SYSTEM REQUIREMENTS

IBM PC AT compatible  
 Pentium class CPU (Intel P5, Cyrix or AMD), 100MHz or higher  
 Microsoft Windows NT  
 Minimum of 16MB free hard disk space  
 Minimum of 16MB RAM (32MB recommended)

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III. INCLUDED FILES

These are the files for each language version.

ADISOUND.DLL - 'Usermode' part of driver  
 ADISND.SYS - 'Kernelmode' part of driver  
 ADISOUND.INI - Initialization file  
 OEMSETUP.INF - Standard configuration file  
 AD18XX.HLP - Help file  
 MIDIMAP.CFG - 'Midi Mapper' configuration file  
 README.TXT - This file  
 7 file(s)

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IV. CONFIGURATION INSTRUCTIONS

If using the default settings is preferred, skip this section and move on to the next section (Installation Instructions).

Provisions are made to customize the WinNT mixer initial settings to desired initial conditions. This applies to visible names, default volume levels, mute state, and presence of any selected mixer lines.

It is important to decide the initial mixer settings and define the ADISOUND.INI file BEFORE installing the drivers.

The file ADISOUND.INI allows an OEM to configure the initial settings

for the WinNT mixer. Users can set the "presence" of any particular input, the initial value, name the input or output, and set the mute status of the signal.

#### A. Specifying A Vendor ID

The first line allows an OEM to specify a vendor ID, to associate with the design and uniquely identify it.

When using the 1816/1816A internal EEPROM, these values are provided in the file. There is no need to change anything.

When an OEM has used the external EEPROM and has specified their own vendor ID, the value in the ADISOUND.INI file MUST correspond to the value in the EEPROM. This is essential because the driver compares the two values to identify a correct part. The driver loads if the values match. The driver reports an error message if the values do not match.

The top of the file looks like this:

```
[OEM_PARMS]
VendorID="ADS7180/FFFFFFFF,OEM7181" (This is a sample format.)
```

These values identify the 1816 and 1816A vendor IDs.

#### B. Adding An OEM Specified Value

The 3 alphanumeric characters are the OEM's registered manufacturer's ID code. For example, ADS is the code assigned by the EISA committee for Analog Devices Inc. The values 7180, 7181 identify an 1816 and 1816A code, programmed internally. The values 7150 identify the 1815 part.

The card ID code must be unique in the manufacturer's product line and can be 4 hexadecimal characters maximum.

For example, assume a registered company ABC, with product 123F. The first line would be:

```
[OEM_PARMS]
VendorID="ADS7180/FFFFFFFF,OEM7182,ABC123F"
```

NOTE: Do not insert spaces. The "/FFFFFFFF" is not required.

#### C. Burning The EEPROM With A Matching Vendor ID Code

ADI also supplies tools for users to build their own EEPROM and to load it into the EEPROM. The tools are located on Analog FTP site (FTP.ANALOG.COM) in Pub/CPDsound/1815\_16\_16A/EEPROMA filename EEPROMA.ZIP.

Use of the External EEPROM assumes the user has full and up-to-date knowledge of the PnP ISA specification originated on May 5, 1994 Version 1.0A. Users can refer to page 30, section 6.2.2.2 for critical information on users programming resources. This is a very complex topic.

The format of the first word of the vendor ID (e.g. ADS) is "ASCII compressed EISA ID".

#### D. Setting Default And Initial Mixer Settings

The ADISOUND.INI file provides control over each input to the WinNT mixer. This file is stored in the C:/WinNT/system32 directory after installation.

The file is organized for each input as follows:

```
[LD_SpeakersOut] "LD" refers to line destination and is the
main line output.
```

LineNameShort= This is used for the WinNT 3.51 mixer.

LineNameLong= This is used to define a visible label that appears on the WinNT mixer.

LinePresence=1 This is the enable flag. If set true (logic 1), the unit is displayed. If reset (Logic 0), the unit is not visible. The LD\_SpeakersOut is programmed not to respond to presence = 0.

Volume=32767 This is the initial level of SpeakersOut on boot up. This control responds to values in the range 0 to 65535 (minimum to maximum).

Mute=0 This is the state of the mute control, 1 means On, 0 means Off.

NOTE: If any of the strings have not been used, ADI provides default values for the attributes.

The remaining signals follow the same format. Refer to the ADISOUND.INI file for the complete format and listing. Complete the desired initial settings for the remaining controls.

The settings are as follows:

[PB\_LineIn] "PB" refers to playback controls.  
[PB\_WaveOut]  
[PB\_MidiOut]  
[PB\_CDRomIn]  
[PB\_MicrophoneIn]  
[PB\_MonoIn]  
[PB\_VideoIn]  
[PB\_SynthesizerIn]  
[PB\_I2S0]  
[PB\_I2S1]  
[PB\_3DSurround] Refers to ADI phat stereo.

[RC\_LineIn] "RC" refers to record controls.  
[RC\_MicrophoneIn]  
[RC\_CDRomIn]  
[RC\_SynthesizerIn] Refers to the OPL3 on-chip FM synthesizer.  
[RC\_VideoIn] Refers to the input labeled Aux3 on the datasheet.  
[RC\_MonoIn]  
[RC\_LineOut]  
[RC\_ModemIn]

When selections are completed, save the ADISOUND.INI to the installation disk. The system is ready for WinNT driver installation.

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## V. INSTALLATION INSTRUCTIONS

### A. Preparing The System

If this is the first installation, skip this section, and move on to the next section (Installing the WinNT Drivers).

To remove previous driver revisions:

1. Remove previous Analog Devices driver revisions using WinNT supplied tools.
2. Make a backup directory on the hard disk, copy all the files from the driver diskette, then unzip the files.
3. Verify that there is an AD1815, AD1816 or 1816A SoundPort Controller sound card in the system.

4. Open the Control Panel/Multimedia folder. Click on "Devices" to view the list of installed devices.
5. Open "Audio Devices". Click once on the Analog Devices driver.
6. Click on "Remove". A warning dialog box will ask to confirm removal.
7. Click on "Yes". A System Setting dialog box will confirm that the driver is removed and ask for a restart.
8. Click on "Restart Now".

#### B. Installing The WinNT Drivers

To install the WinNT drivers:

1. Open the Control Panel/Multimedia folder.
2. Click on "Devices" to view the list of installed devices.
3. Click on "Audio Devices" and the "Add" button.
4. Select the "Unlisted or Updated Driver" entry, click on "OK". The "Install Driver" pop-up requests to insert the driver disk.
5. Click on "OK". The "Add Unlisted Or Updated Driver" pop-up appears.
6. Click "OK". The "Configure Analog Devices Soundcomm" pop-up presents the default settings.
7. Click on "OK" and the driver is installed. WinNT restarts the target system.

The installation is complete.

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#### VI. TROUBLESHOOTING

Ensure the PnP identifier is correct in the INI file.

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[End of README.TXT]