1. INTRODUCTION

The Crystal CS4280 is a PCI audio accelerator with integrated legacy games support suitable for desktop PC designs. When combined with driver software and an AC'97 codec, this device provides a complete high quality audio solution. Legacy compatibility is achieved via PC-PCI, DDMA, and CrystalClear Legacy Support. This product includes an integrated FM synthesizer and Plug-and-Play interface. In addition, the CS4280 offers power management features.

NOTE : It is recommended to use ACTIVE SPEAKER in order to activate your sound card properly.

1.1 Checklist

♦ *Crystal CS4280 Sound Card* x 1

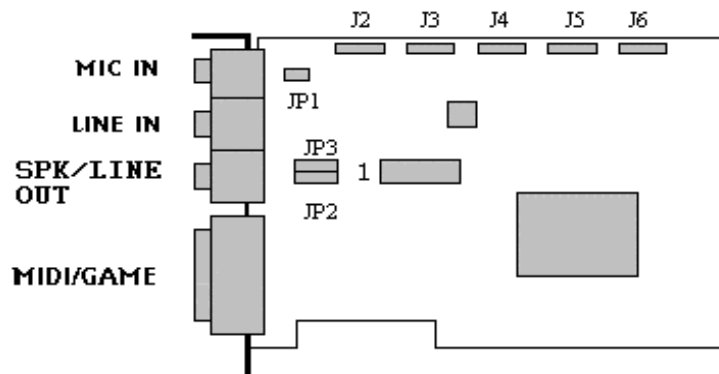♦ *Driver CD* x 1

♦ *Manual* x 1

2. FEATURES

- Chipset: Crystal CS4280

- Bus form: 32 bit PCI bus master, PCI 2.1 compliant Plug and Play compatible

- Audio Converters : 16-bit stereo sigma-delta ADC and DAC. Sophisticated sample rate conversion for quality digital mixing.

- Sample Rates : 16-bit simultaneous record and playback at full bandwidth. 4KHz to 48KHz sample rate both mono and stereo

- 128 Soft Voices Wavetable Synthesis

- Integrated FM Synthesiser

- 3D Spatialization

- Support Microsoft DirectSound and DirectSound 3D

- Audio Inputs / Outputs : Stereo input for line-in, CD-in, Aux-in and mono microphone input plus stereo line output and speaker output.

- Output Power Amp (Optional) : 2 watts per channel

- MPU401 (UART mode) support game port for joysticks or external MIDI

- AC'97 Codec

- Compatibility : Full DOS games compatibility via PC/PCI, DDMA and

CrystalClear Legacy Support

- Full Duplex Operation and Advanced Power Management (PPMI)

- PC'97 and PC'98 Compliance

- Windows 95 & 98, NT 4.0 Drivers

3. INSTALLATION

J2	CD IN, Audio	1:	Signal Input, Right
		2:	Ground
		3:	Ground
		4:	Signal Input. Left
J3	CD IN, Audio	1:	Ground
		2:	Signal Input, Left
		3:	Ground
		4:	Channel Signal, Right
J4	VIDEO IN, Audio	1:	Signal Input, Left
		2:	Ground
		3:	Ground
		4:	Signal Input, Right
J5	AUX IN, Audio	1:	Signal Input, Left
		2:	Ground
		3:	Ground
		4:	Signal Input, Right
J6	PHONE/I & MONO/O, Audio	1:	Signal Input, Phone
		2:	Ground
		3:	Ground
		4:	Signal Out, Mono
JP 2 & JP 3		1-2:	Line Out
	Speaker Out, Line Out Selector	2-3:	Speaker Out

JP 1   Jumper for MIC compatibility

To suit the compatibility requirements of various types of microphone in the market, we have added in a jumper setting at location '**JP 1**' to make it more user-friendly for end-user. The default jumper is '**OPEN**' which is good for the most common type of microphone in the market. However, should you experience problems working with your microphone, then please change the jumper setting to '**CLOSE**'

4.   DRIVER INSTALLATION

4.1   Installation in Windows 95 / 98

After the Crystal PCI Sound Card is securely inserted into an available PCI slot, you can install Crystal PCI Audio 's drivers and utilities.

> *Note: Before installing the Crystal PCI Sound Card, you must delete all other sound card drivers by using their uninstall program. If they do not have their own uninstall program, then you must delete the driver in **Device Manager**. Which is located in the **System** option under **Control Panel.***

1. Power on the system.
2. During the load process, Windows 9X should detect Crystal PCI Sound Card and display a message such as "New Hardware Found". If Windows prompts you for the drivers of the "PCI Multimedia Audio Device", please inset the Driver CD into CD-ROM drive.
3. Enter the driver's location: "D:\CS4280\WIN9X\" and click "Next".
4. The driver installer will guide you through the driver installation process.

4.2   Windows NT 4.0 Driver Installation

> *Note : Install the Sound Card onto the motherboard only after the Windows NT 4.0 operating system software has been installed correctly to your system.*

1. Install the Crystal PCI Sound Card on the motherboard, and power on the system.
2. Hit "start" , select "Setting" → "Control Panel" → "Multimedia" → "Devices",
3. then the "Devices" dialog box will appear.
4. Hit "Add" button , then select "OK " , the "Install Driver " dialog box will appear.
5. Insert the Driver CD into CD-ROM drive D:
6. Type "D:\CS4280\NT40" , click "OK" .
7. Click "OK" button in the "Add Unlisted or Updated Driver" , wait for "Restart" requirement.
8. Restart the computer.

5.   TROUBLESHOOTING

Problem: **No sound During Normal Usage:**
Solution **A:**   Audio accessories improperly connected. Check all audio accessories are plugged into the proper connectors.
Solution **B:**   Volume control adjustment. Make sure that the volume control is not set too low.

Problem: **No Visual Activity on Volume Meter:**
Solution **A:**   DMA channel conflict. Check that no audio accessories are attempting to use the same DMA channels, and change DMA channels accordingly. Check this by viewing the properties of the audio device(s) in the Control Panel - System - Device Manager - Sound, Video & Game Controllers - Properties - Resources.
Solution **B:**   The Crystal PCI sound driver is removed.

Problem: **No sound or receive error messages during Windows starts:**
Solution **A:**   Another Sound Card driver is installed. If you install more than one sound driver in windows, a conflict may arise. To solve this problem, you should remove all unnecessary drivers, and reinstall the Crystal PCI sound driver. (Soundcard drivers are usually stored in the "system" folder (a sub-directory of the "windows" or "win95" folder).
Solution **B:**   The Crystal PCI sound driver is removed.

Problem: **No sound in Windows 95:**
Solution **A:**   Configuration problem. You should check the configuration by viewing the "properties" & "resources" of the sound card drivers (and other possible conflict item drivers) in Control Panel - System - Device Manager. See if all the drivers and utilities are working correctly, and reset any if necessary.
Solution **B:**   Either the mother-board does not support PnP function or the PnP option of the motherboard's BIOS is not enabled. To clarify these, please contact your motherboard dealer or sales representative.