16PnP FD
SOUND CARD
(Plug-n-Play Full Duplex)

USER MANUAL

16PnP FD Sound Card

User Manual

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FCC Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference that may cause undesired operation.

These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution

To comply with the limits for the Class B digital device, pursuant to Part 15 of the FCC Rules, this device must be installed in computer equipment certified to comply with the Class B limits. All cables used to connect the computer and peripherals must be shielded and grounded. Operation with non-certified computers or non-shielded cables may result in interference to radio or television reception.

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A.   WELCOME

Welcome and thank you for purchasing the 16PnP Full Duplex audio card that delivers the next wave of capabilities to your PC. With it, you can sample the highest CD quality digital audio and Full Duplex communication for Audio Conferencing.

The latest card from Multiwave Innovation's multimedia product range incorporates the latest ESS Audio Chip, the ESS1868. The ES1868 Audiodrive® is a single, mixed-signal audio chip that incorporates high-quality stereo sound, and music with built-in mixer controls. It integrates an embedded microprocessor, 20-voice ESFM® music synthesizer, 16-bit stereo wave A/D and D/A, and optional wavetable music synthesizer. A MP401 serial port, dual game ports, DMA control logic with FIFO, and ISA bus interface logic. The card can also operates in Full-duplex DMA Mode.

It supports PC games and applications for Sound Blaster and Sound Blaster Pro. It is also compatible with Microsoft Windows Sound System.

1. SYSTEM REQUIREMENTS
- PC system with 386, 486, pentium, or higher processor CPU
- 5 Megabyte memory and above
- VGA/SVGA video display card
- Audio speakers, Microphone
- Operating system : MSDOS, Windows 3.1x, Windows 95

2. SOUND CARD INSTALLATION

ALWAYS TURN OFF THE COMPUTER BEFORE REMOVING THE COVER. FOR YOUR SAFETY, PLEASE OBSERVE THE WARNINGS SPECIFIED IN YOUR COMPUTER MANUFACTURER'S DOCUMENTATION.

a. Turn off the power of your computer and all peripheral devices.

b. Unplug the power and other peripheral cables.

c. Unscrew and remove the system unit cover.

d. Find an unused 16-bit ISA expansion slot in your system unit.

e. Remove the metal plate from the slot you have chosen and put the screw aside.

f. Unpack the sound card.

g. Install the board into this slot.

h. Secure the card to the expansion slot with the screw you remove from the metal plate.

If your are installing an IDE CD-ROM to the sound card, please refer to **IDE CD-ROM Installation.**

i. Fit back the system unit cover.

B.   INSTALLATION

1. WINDOWS 95

In Windows 95, how you install a device depends on whether the device and the computer are Plug and Play-compliant. To take full advantage of Plug and Play technology, a computer needs the following:

• Plug and Play operating system **[Windows 95]**

• Plug and Play BIOS

• Plug and Play-compliant hardware devices with drivers. e.g. **[16 PnP Full Duplex]**

THE FOLLOWING PROCEDURES PRESUME THAT YOU HAVE READ AND UNDERSTOOD THE SETUP PROCEDURES OF WINDOWS 95 FOUND ON THE WINDOWS 95 USER MANUAL.

INSTALLATION PROCESS

a. First Time Installation for Plug and Play Device

1. Install your sound card. Refer to the section on **"Installing your sound card"** if you have not already done so.

2. Startup the Computer, Windows 95 will auto detect the ESS1868 Control Interface

a) Select: Driver from disk provided by hardware manufacturer

b) The next dialog screen will direct to A:\ for your Installation disk

c) Click OK to continue with the installation

3. Next Windows 95 notifies you that it has identified a new card. (ESS 1868 Plug and Play AudioDrive)

4. Select the option: Driver from disk provided by hardware manufacturer.

5. From the Install from disk dialog, click the Browse button and change the drive to A:\

6. Click OK to proceed with the installation.

7. After the installation, the program will try to install the joystick port. At the Gameport Joystick screen, select: Windows default driver. For some users, Windows 95 will request for Windows 95 Installation disks or Windows 95 Installation CDROM.
   Do not select: driver from disk provided by hardware manufacturers (This will only add one more Audiodrive into Windows 95)

8. Next the Standard IDE/ESDI Hard Disk controller will be detected. Select the Windows Default driver.

You can begin working with the sound card immediately after the installation steps. For users playing some DOS-based games, you might need to activate the Sound Card through the file, FDPNP.exe in the Autoexec.bat or Config.sys. For more infomation refer to page 10-4 and 19.

b. First Time Installation for Legacy (Non Plug-and-Play) Device

For Users having problems with Windows 95 automatic hardware detection, or Non Plug-and-Play Motherboards.

1. Insert the 16 PnP FD sound card. Refer to the section on **"Installing your sound card"** if you have not done so.

2. In Control Panel, double-click the *Add New Hardware* option.

3. In the Add New Hardware wizard, click *Next*.

4. Windows 95 will prompt you to with *Automatically Detect Installed Hardware*. Select *NO* and click *Next*.

5. A list of known devices that you currently wish to install is displayed.

6. Double-click *Other Devices*. This forces Windows 95 to perform a fresh install for your device.

7. You should ignore the manufacturer names list and click *Have Disk* button. This tells Windows 95 to read special installation instructions from your manufacturer disk. Direct Windows 95 to the proper location of the floppy disk drive, e.g. A:\

8. Select the device driver — *ESS 1868 Plug and Play AudioDrive* and click *Next*.

9. Windows 95 will now proceed to install the drivers needed for your sound card and configure it accordingly. Once your device has been successfully configured, Windows 95 will prompt you to restart your system. Select *YES* in order for the new drivers to take effect.

2. WINDOWS 3.1X
INSTALLATION PROCESS

1. Startup MS Windows v3.1
2. Go to File at the Main Menu
   a) Select Run
   b) Change the drive to A:\
   c) Select the directory, w311
   d) Highlight the file Setup.exe
   e) Click OK to start the installation process.
3. The 16PnP FD screen will appear, and starts copying the support files to the Hard disk.
4. The DOS System File Modifications' screen will prompt you to save the amended Autoexec.bat file. Select Save to continue with the installation.
5. Next, the Installation will Setup the 16PnP FD Win 3.1x Driver automatically. Click the Continue button.
6. The last screen will give the options to,
   a) Driver Installation - To continue and install the 16PnP FD drivers,
   b) Driver Uninstallation - To remove previous installed Drivers (greyed),
   c) Exit - To complete the installation
Select a) Driver Installation
7. Finally select Reboot, to load the Sound card drivers
8. Please remove the installation disk from the floppy drive before the system reboots.

C. CONFIGURATIONS

1. CHANGING SETTING WITH DEVICE MANAGER

For Plug and Play-compliant devices, there are no true default settings. Instead, Windows 95 identifies devices and their resource requests, and then arbitrates requests among them. If no other device requests the same resources as another device, its settings should not change. If another device requests its resources, the settings might change to accommodate the request. Consequently, you should never change resource settings for a Plug and Play-compliant device such as the AudioDrive Plug and Play sound card unless absolutely necessary. Doing so will fix its settings, making it impossible for Windows 95 to grant another device's request to use that resource.

All legacy devices have fixed resource settings, which are defined either during Windows Setup from a previous configuration, or afterward in the Add New Hardware wizard Control Panel.

A good example that requires you to fix its settings for the sound card is when you are playing a MSDOS games that is not Windows 95 compliant. Most MSDOS games may allows you to change the Sound Blaster or General MIDI address, interrupt, and DMA settings. This games will usually works well if the settings you have setup for the game matches the setting allocated by Windows 95. However, when this settings allocated by Windows 95 did not work with the MSDOS games properly or not working at all, then you have to fix the sound card settings in Windows 95 by changing resource settings.

TIPS : TO EXAMINE THE SETTINGS OF SOUND BLASTER ADDRESS, INTERRUPT, AND DMA, TYPE "SET" COMMAND FROM THE MSDOS PROMPT.

Defaults that should work well in most MSDOS games and MIDI sequencer software :-

- Digital Audio Address : 220 Hex
- Digital Audio Interrupt : 5 or 7
- Digital Audio DMA : 1
- FM Music : 388 Hex (Fixed Settings.)
- MPU401 MIDI Port Address : 330 Hex
- MPU401 MIDI interrupt : 9

Using the Device Manager

1. In the System option in Control Panel, click the *Device Manager* tab.
   -Or-

Right-click *My Computer*, click *Properties* from the context menu, and then click the *Device Manager* Tab.

2. Double-click the device type — *Sound, video and game controllers*.

3. Double-click the device — *ESS 1868 Plug and Play AudioDrive*. Or select the device, and then click *Properties* button to view or change its settings.

To Update and Change Device Driver
1. In Device Manager, double-click the device type — *Sound, video and game controllers*.
2. Double-click the device — *ESS 1868 Plug and Play AudioDrive*. Or select the device, and then click *Properties* button to view or change its settings.
3. Click the *driver* tab. The Driver properties dialog box shows the driver files and current resource setup for that device.
4. Click the *Change Driver* button.
5. In the Select Device dialog box, click *Have Disk*.
6. Insert the driver diskette from the manufacturer.
7. In the Install From Disk dialog box, type the path name, a:\ or b:\ , and click *OK*.

Modifying Device Driver Resources
1. In Device Manager, double-click the device type — *Sound, video and game controllers*.
2. Double-click the device — *ESS 1868 Plug and Play AudioDrive*.

Or select the device, and then click *Properties* button to view or change its settings.

3. In the device's properties, click the *Resource* Tab.
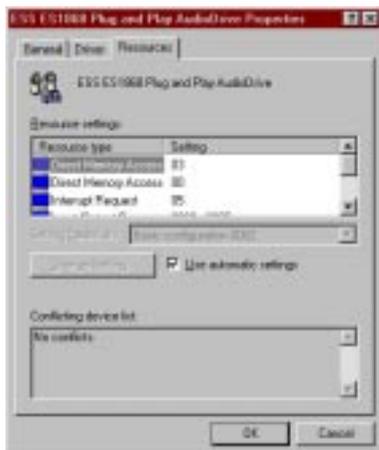
NOTICE THAT THE CONFLICTING DEVICES LIST SHOWS ANY CONFLICTING VALUES FOR RESOURCES USED BY OTHER DEVICES.

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4. In the Resource Type list, select the setting you want to change — for example, Input/Output Range — and then click the *Change Setting* button.

NOTICE THAT YOU CAN SELECT AND SET THE IRQ, I/O, AND DMA INDEPENDENTLY, AND THAT IF THE OPTION NAME — USE AUTOMATIC SETTINGS — IS CHECKED, YOU CANNOT CHANGE RESOURCE SETTINGS.

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5. Choose a setting that does not conflict with any other devices, and then click *OK*.

6. Shut down and restart Windows 95. Then verify that the settings are correct for the device.

2. CHANGING YOUR MIDI OUTPUT

For the 16 PnP FD without the Wavetable Synthesis Daughterboard installed, you should use only the MIDI for Internal ESS ESFM Synthesis as your MIDI output. You will use the MIDI for External MIDI Port **only** when you have installed a Wavetable Synthesis Daughterboard on the sound card. This Wavetable Synthesis

Daughterboard must be compatible with the Wave Blaster interface.

1. In the Multimedia option in Control Panel, click the *MIDI* tab.
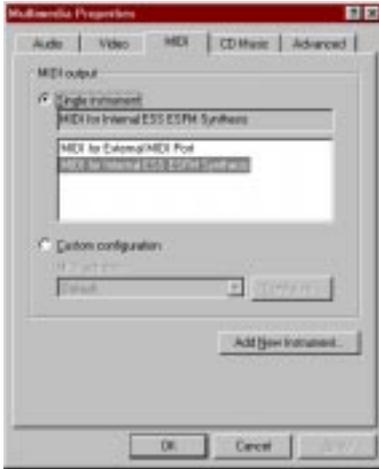
2. On the MIDI output box, click the MIDI for External MIDI Port and click OK button.

Your MIDI output is now properly configured to play through the Wavetable Synthesis Daughterboard. Test the sound card by playing back some MIDI files using the MEDIA PLAYER application.

3. ADJUSTMENTS made to the System Startup files

These lines will be added automatically to the Boot up System files, after the Software installation for MS Windows 3.1/x environment.

1. Autoexec.bat;
   C:\Windows\ESSVOL.EXE /V:8 /L:8 /W:8 /M:0 /C:8 /S:8 /A:8
2. Config.sys;
   Device=C:\FDPNP.EXE
3. The installation procedures will save the previous Autoexec.bat to Autoexec.ESS, and the Config.sys to Config.ESS.

4. PARAMETERS for FDPNP.EXE

Software switches for manual configurations

PnP Full Duplex Sound Card Control Program

Ver 1.00 Beta

FDPNP /W:[E|D] /A:[220|240|260|280] /D:[0|1|3] /I:[5|7|9|A|B]

/J:[E|D] /B:[300|310|320|330] /M:[S|E|D|2|5|7|10|11]

/R:[0|1|3]

/C:[E|D] /P:[170|1E8|168] /Q:[9|10|11|15]

where

/W:E = Enable audio devive (default).

/W:D = Disable audio device.

/A:XXX = Audio device IO base address (default 220).

/I:X = Audio device interrupt channel (default 5).

/D:X = Audio device Playback DMA channel (default 1).

/D:X = Audio device Recording DMA channel (default 0).

/B:XXX = MPU-401 IO base address (defualt 330).

/M:E = Enable MPU-401 with no IRQ (default).

/M:D = Disable MPU-401.

/M:S = Sharing IRQ with audio device.

/M:X = MPU-401 IRQ channel select.

/J:E = Enable Joystick (default).

/J:D = Disable Joystick.

/C:E = Enable EIDE CDROM (default).

/C:D = Disable EIDE CDROM.

/P:XXX = EIDE CDROM IO base address (default 168).

/Q:X = EIDE CDROM interrupt channel (default 11).

5. PARAMETERS for ESSVOL.EXE

ESSVOL [/?] [/v:XX]

/V   Change Master volume
/L   Change Line volume
/W   Change Wave volume
/M   Change Mic volume
/C   Change CD volume
/S   Change Synthesizer volume

x   Volume, Note: XX means 0
Then value range of volume is 0-15.

D. APPENDIX

1. FEATURES OF THE SOUND CARD

- Plug-and-Play 16-bit sound card
- True Single, Mixed-Signal Audio Chip (ES1868) 16-bit Sound card
- Full Plug-and-Play and Windows 95 ready
- High-quality, 20 voice ESFM music synthesizer
- Full Duplex (mono) and Half-Duplex (stereo) mode
- IDE interface for Double & Quad Speed CD-ROM drives
- Built-in selectable 6V or 9V DC supply for any external active speakers
- Upgradable with an external Wavetable Synthesizer

2. TECHNICAL DETAILS

Plug and Play (PnP) Features

- On-Chip PnP support for audio, joystick port, FM, modem, MPU-401, CD-ROM, and user-defined I/O

Stereo Music Synthesizer

- 20 voice ESFMâ music synthesizer, and OPL3 compatible
- Compatible with Sound Blaster®, Sound Blaster Pro® version 3.01, and MS Windows Sound System®

Full-Duplex (FD) Mode

- Supports full-duplex DMA in monophonic mode
- Two DMA Channels, first audio channel is for SB-compatible DMA and extended mode DMA. The second DMA channel is used for audio playback in full-duplex mode
- The left channel D/A records while the right channel plays back.
- Half-duplex stereo mode

Record and Playback Features

- Record, compress, and playback voice, sound, and music
- 16-bit stereo wave A/D and D/A
- 16-bit stereo music D/A
- Programmable sample rates from 4 kHz to 44.1 kHz for record and playback

Mixer Features

- 6-channel stereo mixer with stereo for line, microphone, CD-audio, TV, music, and digitized audio
- Mixer-controlled record and playback with logarithmic volume controls

Inputs/Outputs

- Stereo inputs for line-In, CD-ROM, and AUX, and a mono input for microphone
- MPU-401 (UART mode) interface for wavetable synthesizers and MIDI devices
- Integrated dual game ports
- Built in 6-watts power amplifier

MIDI Interface

- Built-in MIDI interface for connection to external MIDI devices

CD-ROM Interface

- Built-in CD-ROM interface that supports IDE CD-ROM drive

Upgrade Options

- External wavetable music synthesizer

3. GENERAL MIDI SOUND SET

0 Acoustic Grand Piano	45 Pizzicato Strings	91 Pad 4 (choir)
1 Bright Acoustic Piano	46 Orchestral Harp	92 Pad 5 (bowed)
2 Electric Grand Piano	47 Timpani	93 Pad 6 (metallic)
3 Honky-tonk Piano	48 String Ensemble 1	94 Pad 7 (halo)
4 Rhodes Piano	49 String Ensemble 2	95 Pad 8 (sweep)
5 Chorused Piano	51 SynthStrings 2	96 FX 1 (rain)
6 Harpsichord	52 Choir Aahs	97 FX 2 (soundtrack)
7 Clavinet	53 Voice Oohs	98 FX 3 (crystal)
8 Celesta	54 Synth Voice	99 FX 4 (atmosphere)
9 Glockenspiel	55 Orchestra Hit	100 FX 5 (brightness)
10 Music Box	56 Trumpet	101 FX 6 (goblins)
11 Vibraphone	57 Trombone	102 FX 7 (echoes)
12 Marimba	58 Tuba	103 FX 8 (sci-fi)
13 Xylophone	59 Muted Trumpet	104 Sitar
14 Tubular Bells	60 French Horn	105 Banjo
15 Dulcimer	61 Brass Section	106 Shamisen
16 Hammond Organ	62 Synth Brass 1	107 Koto
17 Percussive Organ	63 Synth Brass 2	108 Kalimba
18 Rock Organ	64 Soprano Sax	109 Bagpipe
19 Church Organ	65 Alto Sax	110 Fiddle
20 Reed Organ	66 Tenor Sax	111 Shanai
21 Accordion	67 Baritone Sax	112 Tinkle Bell
22 Harmonica	68 Oboe	113 Agogo
23 Tango Accordion	69 English Horn	114 Steel Drums
24 Acoustic Guitar (nylon)	70 Bassoon	115 Woodblock
25 Acoustic Guitar (steel)	71 Clarinet	116 Taiko Drum
26 Electric Guitar (jazz)	72 Piccolo	117 Melodic Tom
27 Electric Guitar (clean)	73 Flute	118 Synth Drum
28 Electric Guitar (muted)	74 Recorder	119 Reverse Cymbal
29 Overdriven Guitar	75 Pan Flute	120 Guitar Fret Noise
30 Distortion Guitar	76 Bottle Blow	121 Breath Noise
31 Guitar Harmonics	77 Shakuhachi	122 Seashore
32 Acoustic Bass	78 Whistle	123 Bird Tweet
33 Electric Bass (finger)	79 Ocarina	124 Telephone Ring
34 Electric Bass (pick)	80 Lead 1 (square)	125 Helicopter
35 Fretless Bass	81 Lead 2 (sawtooth)	126 Applause
36 Slap Bass 1	82 Lead 3 (caliope lead)	127 Gunshot
37 Slap Bass 2	83 Lead 4 (chiff lead)	
38 Synth Bass 1	84 Lead 5 (charang)	
39 Synth Bass 2	85 Lead 6 (voice)	
40 Violin	86 Lead 7 (fifths)	
41 Viola	87 Lead 8 (brass+lead)	
42 Cello	88 Pad 1 (new age)	
43 Contrabass	89 Pad 2 (warm)	
44 Tremolo Strings	90 Pad 3 (polysynth)	

E. FAMILIARIZATION with your Sound Card

1. PLUG-AND-PLAY FULL DUPLEX SOUND CARD
Please refer to the Technical specification for more details.
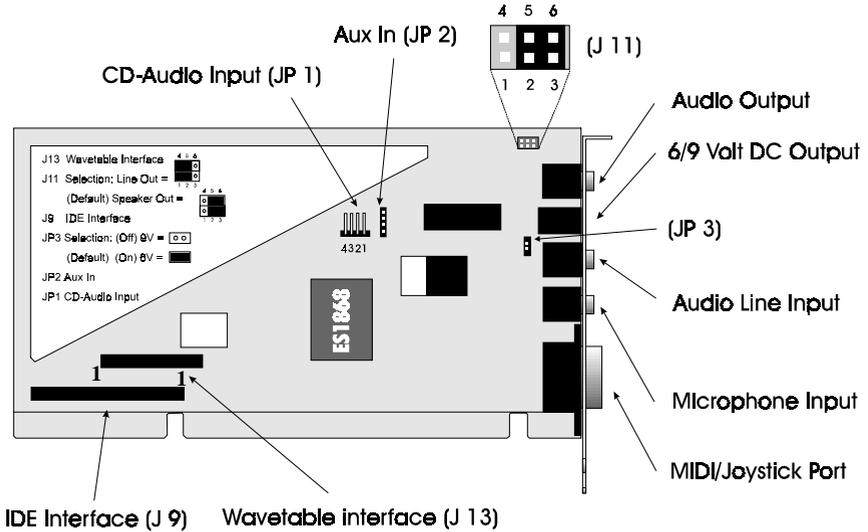
CD-Audio Input (JP 1) - Connect the Audio-In cable (4-pin) from the CD-ROM Drive.

Pin 1: Right   Pin 2 & Pin 3: GND   Pin 4: Left

L G G R

Aux-In (JP 2) - Optional Audio-In Cable connection for CD-ROM Drives which provides 3-pin type connectors. Note: When in-use, do not install the Optional Wavetable Daughter Board as it is using the same circuitry as the Aux-In connector.

Pin 1: Right   Pin 2 & 4 : GND   Pin 3: Left

L R G G

Audio Output - Connect your speakers or headphone into this jack. The jumper, J11 controls its output power.

J11 : Speaker out (Amplified) or Line out (Non-amplified) audio output selection.

This jumper allows you to choose the audio level of the output jack. This sound card does not have a separate line level output jack like many other sound cards. The audio level of the output jack — determined by this jumper setting — can be either amplified or non-amplified. Normally, non-amplified (line out) audio output is set for active speaker. (Speaker using DC power) *Factory default setting is preset to Speaker out (Amplified audio output: 6 watts).*

6/9 Volt DC Output - Connect the special DC AUDIO CABLE to this DC jack to power external speakers that require DC power to work. A choice of 6 volts or 9 volts is set by the jumper setting, JP5 is found on the sound card.

JP5 : 6 Volts or 9 Volts DC power output selection for the DC output jack

Polarity of DC Jack

This sound card has a DC output jack providing DC power supply to most active speaker. This jumper setting allows you to choose either the 6 volts or 9 volts DC output supply for the output jack. *Factory default setting is preset to 6 Volts DC.*

Audio Line Input - Connect the audio output of any external audio device into this jack.

Microphone Input - Only connect a microphone into this jack.

MIDI/Joystick Port - You may connect this port directly to any standard analog joystick. If you have a standard PC MIDI CABLE, you may also connect this port to MIDI devices.

IDE Interface - This sound card allows you to connect an IDE CD-ROM drive using this IDE interface (secondary IDE).

Wavetable Interface (J 13) - Interface for the Optional Wavetable Daughter Board. Note: Do not use the Aux-In connector (JP 2) inconjunction with the Daughter board, instead use the CD-Audio Input (JP 1).

This IDE interface is used only if you do not have another secondary IDE interface on your PC system.

F.   IDE CD-ROM Drive Installation

CHECK IF YOUR MOTHERBOARD HAS A BUILD-IN PRIMARY OR SECONDARY IDE INTERFACE . IF SO, IT IS HIGHLY RECOMMENDED THAT YOU SHOULD CONNECT THE CD-ROM DRIVE ON THE MOTHERBOARD IDE INTERFACE.

Reason for using an on-board IDE interface or VL/PCI IDE interface :-

- Most on-board IDE interfaces have a higher performance then the sound card's IDE interface because they use the Vesa Local bus or the PCI bus.
- 32-bit data access may be available.

You may use the sound card's IDE interface if you do not have another secondary port IDE interface on your PC.

BEFORE YOU BEGIN, YOU SHOULD READ THE USER GUIDE OF YOUR CD-ROM DRIVE.

1. INSTALLATION PROCEDURES :-

a. Your CD-ROM package should come with a CD-ROM drive, an audio cable, an interface cable, the driver installation disk, and the drive user guide manual.

b. Insert one end of the IDE interface cable into the back of the drive. You will find that one side of the cable is dotted in red (Pin 1). The connector should go into connector slot at the back of the drive.

c. Attach one end of the CD-audio cable to the back of the drive. The plug should only fit in one way. If it does not, reverse the plug and try again.

d. Find an appropriate slot in your PC casing and carefully insert your

CD-ROM drive and cables.

e. Connect the other end of the IDE interface cable to the IDE Interface (J9) found on the sound card or other IDE interface. Ensure that pin 1 of the cable matches the connectors' pin 1.

f. The other end of the CD-audio cable should also fit into sound card's CD-Audio input (JP1).

g. The internal PC power cable will be plugged in next. Connect the power cable into the power input found in the CD-ROM drive.

h. You may now secure the CD-ROM drive with screws.

Note: Other details may be found in your driver's manual.

G. FAQ (Frequent asked Questions)

Q. *After I installed the Plug and Play sound card running in Windows 95, my sound card did not work. How do I resolved this problem?*

A. *Double check the sound card device properties from the Device Manager. The Device Manager informs you what is wrong with the device or driver. If a hardware conflict occurs, try to resolved the problem by changing the device resource. Please refer back to the section on **Windows 95 Installation** on **"Changing Setting with Device Manager"**.*

Q. *The joystick does not work at all or does not work properly when using the Audiowave Sound card's MIDI/Joystick port.*

A. *Some computers have a built-in joystick port on the motherboard. Other computers have a multi-I/O board that has a joystick port. Make sure that you disable the joystick port on the second device.*

Q. *I hear music, but I don't hear speech or sound effects from my game.*

A. *There are few possible causes: The game you are currently running doesn't have speech or sound effects. The game is set to use the Ad Lib driver. Run the game setup and select to Sound Blaster® or Sound Blaster Pro® driver.*

Q. *The Speakers produced very soft level of sound even though the volume is adjusted to the highest level.*

A. *Make sure that the Jumpers, J11 are both set to the RIGHT for **Speaker Out** performance. When set on the RIGHT, the card provides an amplification of 6 watts.*

Q. *I have a Legacy Network Card installed with IRQ set at 5. After installation, MS Windows 95 still assign the Sound Card to IRQ 5.*

A. *Copy the provided driver, FDPNP.EXE from the installation disk into the root directory, c:\ and add the line Device=c:\FDPNP.EXE into the file Config.sys.*

Q. *There is no Music from the CD-ROM drive when played with a Music CD, even though MS Windows 95 detects the MCI [CD-Audio].*

A. *Check the connection of the Audio cable to the FD card. If your CD-ROM drive Audio ouput has the Ground pin in the center, connect the cable to the Aux-In (JP 2) instead of the CD-Audio Input (JP 1). Refer to Page 15 for more information.*

Q. *Recently I installed a Wavetable Daughter board on the FD card but after that there is no Music from my CD-ROM drive.*

A. *You must connect the CD-ROM audio cable to the CD-Audio Input (JP 1) instead of Aux-In (JP 2). The Wavetable Daughter board is using the same circuitry of the Aux-In. Refer to Page 15 for more information.*

Q. *I installed several DOS-based games into my MS Windows95 system, some can detect the Sound Card but some cannot.*

A. *Use the file FDPNP.EXE that was added into the Hard disk during installation for Win 95 users. Add the line, FDPNP.EXE in the Autoexec.bat file or Config.sys. Save and Reboot the system to activate the Sound Card.*

FOR RELEASE NOTES AND NEWS, PLEASE READ THE README.TXT FILE FOUND IN YOUR DRIVER DISK.

- End -