

# ESS 1688 Cost Saver 16-Bit Sound Card

## **NOTE : LOADING SOFTWARE FROM YOUR CD-ROM DRIVE..**

You will notice in the instructions concerning installation of software drivers contained in this manual, references to the CD-ROM drive letter 'd' (i.e. d:\eng\1868\win95) If this drive letter is not correct according to your system configuration, then please change as necessary.

## **TRADEMARK ACKNOWLEDGEMENTS**

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- Sony is a trademark of Sony Corp.
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## INTRODUCTION

The Model # 201-1 is a 16-bit sound card based on the ESS ES1688 integrated digital sound controller chip. The Model # 201-1 is compatible with Sound Blaster PRO. It provides an integrated audio solution for business audio, education/entertainment sound card and multimedia applications.

The Model # 201-1 will let you run thousands of Sound Blaster and Sound Blaster PRO compatible games and applications, including a rapidly growing number of Windows business applications that are compatible with the Windows Sound System.

Included with full support for these PC popular sound standards, the model includes multiple audio cable interfaces for SONY, Mitsumi and Panasonic CD-ROM drives. Also, it has multiple input and output ports for recording and playback of stereo sound.

## Features

Model # 201-1 is a full featured sound card which includes the following :

- 16 bit stereo sound
- Record, compress and playback voice, sound and music
- Integrated 16-bit A/D and D/A converters
- ADPCM as well as patented ESPCM compression for lower bit rates
- Maximum sampling rate up to 44kHz for recording and playback
- 6 channel mixer for ES1688
- Software volume control for both record and playback
- Built in 2 watts per channel stereo power amplifier
- Connectors for mic in, line in, line out, speaker out and wave table connector
- Game port for joystick or MIDI device

## What is in your package?

You should have the following items in your package :

Model # 201-1 Sound Card  
MMCD CD-ROM containing all drivers & manuals  
Generic Layout & Troubleshooting manual

## System Requirements

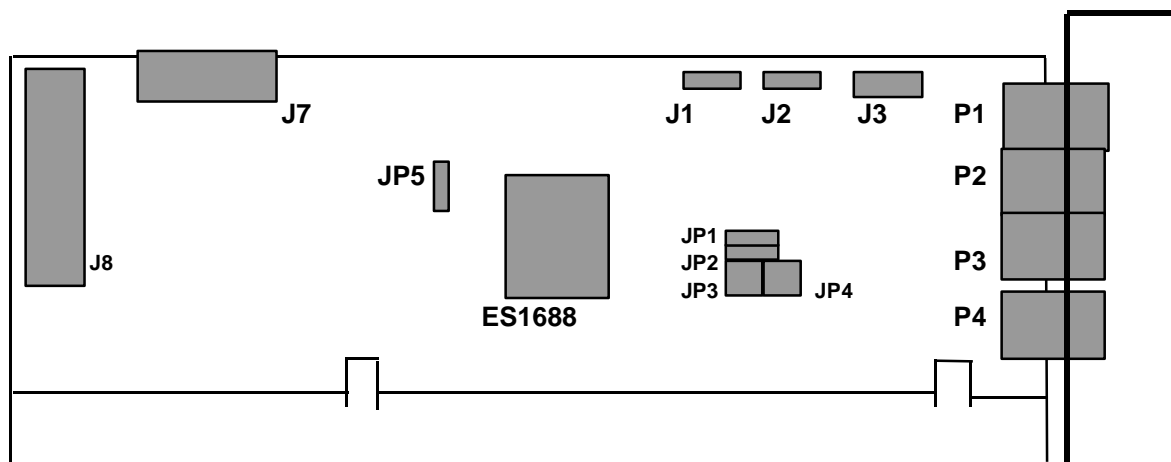
Model # 201-1 is manufactured for IBM PC compatible components, software and related computer components:

IBM-compatible computer models and compatibles  
At least 2MB RAM (4MB RAM for Windows 3.1 Applications)  
VGA or SVGA graphics adapter and monitor  
2MB free on hard disk for installing all PT-201 software  
MS DOS version 3.3 or later  
Windows 3.1 for games and applications in Windows  
External speakers, microphone and headphones (optional)

**Warning:** To avoid temporary or permanent hearing loss or impairment due to unexpected noise or static, always hold your headphones away from your ears before putting them on. You should also lower your speaker's volume before testing.

## Hardware Installation

1. Power down your computer, remove the cover and find an empty 16-bit expansion slot and remove the metal bracket.
2. Check the jumper setting of Model # 201-1 before installing it into the open slot and secure it.(Refer to the jumper setting section)
3. Insert the Model # 201-1 into the expansion slot firmly and evenly. Take care not to force it into the slot. Once you have properly positioned the sound card into the slot, secure it with the bracket screw.
4. Connect a pair of speakers to the Speaker Out connector on the sound card bracket.
5. Replace your computer's cover. Hardware installation is completed.



### Layout of PT-201

### Jumpers and connectors description :

J1 : Panasonic audio connector  
 J3 : Sony audio connector  
 J8 : Wave table connector  
 P1 : MIC in connector  
 P3 : Line out connector

J2 : Mitsumi audio connector  
 J7 : Game cable connector  
 J9 : Speaker in connector  
 P2 : Line in connector  
 P4 : Speaker out connector

### JP1 & JP2 : Port address select

JP1	JP2	Address
2-3	2-3	220H***
2-3	1-2	230H
1-2	2-3	240H
1-2	1-2	250H

**Note:** The setting with \*\*\* stands for default setting.

### JP4 : DRQ & DACK Select

1-2	3-4	DRQ/DACK no.
Open	Open	No DRQ/DACK
Open	Short	DRQ1/DACK1***
Short	Open	DRQ0/DACK0
Short	Short	DRQ3/DACK3

**JP3 : IRQ select**

1-2	3-4	IRQ no.
Open	Open	IRQ9
Open	Short	IRQ7
Short	Open	IRQ5***
Short	Short	IRQ10

**JP5 : Game Port Select**

Setting	Enable/Disable
Short	Enable***
Open	Disable

**Note :** The setting with \*\*\* stands for default setting.

# Software Driver Installation

## DOS Driver Installation

1. Insert the MMCD CD-ROM in to your CD-ROM drive.
2. Go to the Model # 201-1 ESS1688 Cost Saver Product Page (in the PRODUCT GALLERY section)
3. Click once on the **Install** button for **DOS Driver**

**Note:** If you experience problems with this form of installation then exit to DOS and load from there. Proceed by changing directories to **d:\eng\1688\dos\** 'd' representing your assigned CD-ROM drive letter. Change the drive letter if necessary.

4. The driver installation program will appear. Follow the on-screen prompts to configure the sound card for your system.
5. After setup, you should sound test the sound card by clicking on the **TEST** button. If there are any problems, check your I/O address, IRQ and DMA settings.
6. Once you are satisfied with your settings, click on the **OK** button at the bottom of your screen and the driver installation program will finish setting up your system by modifying your AUTOEXEC.BAT and CONFIG.SYS files and copying appropriate driver software to your system.

## Windows 3.1 Driver Installation

1. Insert the MMCD in to your CD-ROM drive and go to the ESS1688 Cost Saver Product Page (under PRODUCT GALLERY section)
2. Click once on the **Install** button for **Windows 3.1**
3. When the *AudioRack* Setup window appears, click the **Driver Installation** button, then click the **Automatic Board Configuration** button.
4. After that, click the **Restart Windows** button for installing the Windows driver and the Windows system will be updated automatically.

## Windows NT 3.5 Driver Installation

1. After entering **WINNT** (Version 3.51). Double click on the “**Main**” → “**Control Panel**” → “**Drivers**” icons.
2. Click the “**Add...**” button
3. Select the “**Unlisted or Updated Driver**” item, and click the “**OK**” button.
4. Insert the MMCD in to your CD-ROM drive and then type **d:\eng\1688\winnt35\** Then click the “**OK**” button.
5. Click the “**OK**” button again.
6. Under the “**ESS Base I/O Address**” dialog box, click the “**continue**” button.
7. After that, you can modify the setting to what you want under the “**ESS1688 Configuration**” dialog box. Click the “**OK**” button when you finish the modification.
8. For the new driver to take effect, you should click the “**Restart Now**” button.

## Windows NT 4.0 Driver Installation

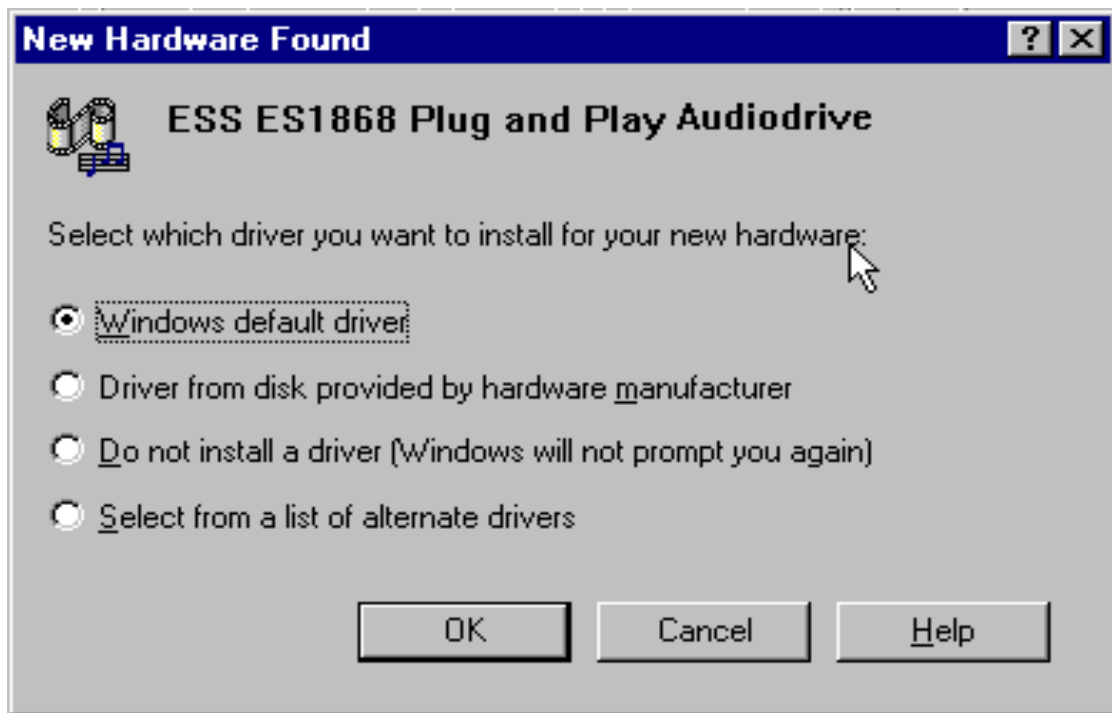
1. Double click **My Computer**
2. Double click **Control Panel**
3. Double click **Multimedia**
4. Click **Devices**
5. Click **Add**
6. Select **Unlisted or Updated Drivers**, then click **OK**
7. Insert the MMCD in to your CD-ROM drive and type in the path into the command line **d:\eng\1688\winnt4\**
8. Follow the instructions of the drivers (select I/O, IRQ, DMA etc)

**Note:** Windows NT 4.0 drivers were being developed at the time of writing this manual. Should these drivers not be available on the MMCD CD-ROM please contact the web sites listed below or your local dealer or sales representative

## Windows 95 Driver Installation

**Note** : Install the Sound Card into the motherboard only after the Windows '95 has already installed into the new HDD of the new system, then restart the system and follow the procedure below..

1. Install the Sound Card on the motherboard, and power on the system.
2. During the Windows 95 boot procedure, new hardware will be detected as shown below.



3. Select the “**Driver from disk provided by hardware manufacture**” item, and click the “**OK**” button.
4. Windows 95 will then prompt a “**Install from Disk**” dialog box.
5. With the MMCD already loaded into your CD-ROM drive , type the letter of your CD-ROM drive followed by `d:\eng\1688\win95\` , then click “**OK**” button to install the relevant Windows 95 driver.
6. After that, the “**New Hardware Found**” dialog box window will appear for gameport joystick.
7. Select the “**Windows default driver**” item, and click the “**OK**” button to complete the installation of the game port driver.
8. Finally, Windows 95 will ask if you want to restart system for the new driver to take effect, you should click the “**YES**” button.

## Additional ESS Sound Utilities

The ESS1688 is also bundled with the ESS **AudioRack** Sound Utility software, however you will find that the **Willowpond Sound Utilities** included on this MMCD are of a higher quality and it is suggested you use this as your primary sound utility program.

But just in case you would like to judge for yourself we have included the **AudioRack** utilities on this MMCD in directories as follows. There are no **Install** buttons on the MMCD for these software's, so you'll have to go to DOS and locate the relevant directories and then type **setup** at the DOS prompt.

### Directory..

**Windows 3.1 Version**

**d:\eng\1688\oth\win31utl\**

<b>Note:</b> For the Windows 3.1 version you will see a screen giving you the choice of loading <b>Driver Installation</b> or <b>Software Installation</b> . If you have already loaded the drivers as per previous instructions then choose <b>Software Installation</b> only.
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### Directory..

**Windows 95 (32bit) version**

**d:\eng\1688\oth\win95utl\**

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## Notes on DMA / IRQ / Port Address

:	<b>DMA</b> - direct Memory Access (DMA) is the electronic channel for moving data directly between main storage and peripheral equipment without requiring processing of the data by the CPU.
	<b>IRQ</b> - Interrupt request (IRQ) is the request for processing on a particular priority level. It is generated by the I/O device (the add-on cards).
	<b>Port address</b> - is the address used to specify port connectivity parameters and to assign link addresses for the certain I/O device.



## Useful E-Mail Addresses

If you find that the installation driver for your particular operating system is not included on this MMCD CD-ROM then please visit one of the following web sites for further information..

[www.esstech.com](http://www.esstech.com)

ESS Technology Home Page

[www.mmcd.com](http://www.mmcd.com)

MMCD Home Page

Thank you