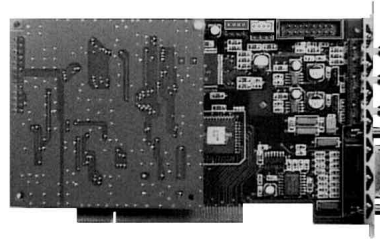




ChipChat Sound



MicroChannel Sound Card

User's Guide

P/N 12310 REV F

AGENCY APPROVALS

FCC-B FCC NOTICE - WARNING

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential 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.
- Shielded interface cables must be used in order to comply with the emission limits.

CAUTION:

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Operation is subject to the following two conditions:

- (1). This device may not cause harmful interference, and
- (2). This device must accept any interference received, including interference that may cause undesired operation.

DOC Canadian Department of Communications Compliance

This equipment does not exceed Class B limits per radio noise emissions for digital apparatus, set out in the Radio Interference Regulation of the Canada Department of Communications. Operation in a residential area may cause unacceptable interference to radio and TV reception requiring the owner or operator to take whatever steps are necessary to correct the interference.

VCCI Japan VCCI Compliance

This equipment has been tested as a 2nd Class device (information equipment to be used in a residential area or an adjacent area thereto) and is in conformance with the standards set by the Voluntary Control Council For Interference by Data Processing Equipment and Electronic Office Machines aimed at preventing radio interference in such residential area.

When used near a radio or TV receiver, it may become the cause of radio interference.

Read the Instructions for correct handling

CE-Mark Declaration of Conformity

Application of Council Directives 89/336/EEC and 73/23/EEC

Standards for which conformity is declared:

EN55022, EN50082-1, EN60950

Manufacturer:

ChipChat / 24224 Michigan Ave / Dearborn, MI 48124 USA / www.ChipChat.com

Type of Equipment:

Sound Card for Computer

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ChipChat
24224 Michigan Avenue
Dearborn, MI 48124

Phone: (313) 565-4000
Fax: (313) 565-4001

Internet World Wide Web <http://www.ChipChat.com>
E-Mail SoundCard@ChipChat.com

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CHECKLIST

Your product should contain the following items:



Sound Card



Diskette



User's Guide

If any of these items are missing or damaged, or if you encounter problems while using this product, refer to your point of sale contact.

CAUTION:

Prolonged exposure to excessive noise can cause hearing loss. The volume level on audio headphones must be kept at a reasonable level to avoid hearing loss.

INTRODUCTION, FEATURES, REQUIREMENTS

Introduction

Congratulations on your purchase of a high quality, versatile stereo sound card for your Micro Channel computer. It brings your computer alive with exhilarating 16 bit CD quality digital sound and advanced music synthesis. It allows recording and playback of audio to your hard disk drive and adds music and sound effects to your games and presentations. The -32 version of the sound card comes with an advanced WaveTable music synthesizer for the highest quality music reproduction. The -16 sound card has advanced FM synthesis and is ready for the WaveTable upgrade - Refer to the *Ordering Information and Options* section of this manual.

Features

- Compatible with industry standards
 - SoundBlaster, SoundBlaster Pro, SoundBlaster Pro2
 - Windows Sound System 2.0
 - Roland MPU-401 MIDI and General MIDI
 - IBM UltiMedia, MPC I, MPC II
 - Adlib
 - PC games
- WaveTable 32 voice, 128 instrument (-32 version)
- FM synthesizer with 20 voices
- Six Channel Stereo Mixer
- Stereo record/playback at 16 bits up to 44.1KHz
- Dual joystick game port/ MIDI port connector
- MIDI In/Out with optional cable
- Adapter fits in 1/2 size slot
- Internal CD-ROM audio support
- Advanced DSP design takes load off your computer's CPU
- DOS, Win (3.1, 95, NT), OS/2 (2.x, Warp) compatible

System Requirements

- One free slot in your computer to install the sound card
- Operating system support:
 - DOS 3.3 or higher
 - Windows (3.1, 3.11, 95, NT)
 - OS/2 (2.x, Warp)

HARDWARE INSTALLATION

To install the sound card you need your copy of the Reference Disk for your particular computer. Some systems have the reference information installed on the hard drive. First, you will install the card. Second, you will update your Reference Disk.

Installing the Sound Card

1. Unpack your sound card
2. Turn off power to your computer and peripherals
3. Open your computer and install the sound card in a free slot in your computer. Refer to your PS/2 reference manual.
4. If your computer has an internal CD-ROM, refer to "Connecting Input/Output Devices" in this manual for instructions on connecting the audio from the CD-ROM drive to the proper connector on the sound card.
5. After the sound card is installed and the cover is back on your computer, turn on the power to your computer

Updating the Reference Disk

After you install the sound card in your computer and apply power, you will get a #165 error on your screen - indicating that a new card has been added to your computer and it needs to be configured. Since this is the first time you have installed the sound card into your computer, you will have to update your computer's Reference Disk.

Place the Reference Disk for your computer into drive 'A' and press the F1 key. If your system has the reference information on the hard disk, the configuration program will automatically start.

At the IBM logo, press 'ENTER'

At the message:

```
Adapter Configuration Error #165
Automatically configure system? (Y/N)
```

Press 'N' for No. Before you can run automatic configuration you need to update the Reference Disk with the new sound card information.

HARDWARE INSTALLATION

At the MAIN configuration menu, select "Copy an Option Diskette"

When prompted to insert the diskette with the new files, place the sound card's DISK-1 in drive 'A' and then press 'ENTER'

Insert your computer's Reference Disk when asked to do so. This is not required on systems with the reference information on the hard disk.

At the MAIN configuration menu, select "Set Configuration"

Then select "Change Configuration"

If your computer has DMA parallel port capabilities, be sure the "**Parallel Port Arbitration Level**" is set to "**Disabled**"

Use the down arrow key and look for the "**ChipChat Sound Card**" entry. Be sure the entry reads "**Enabled**". If the entry is "**Disabled**", change it to "**Enabled**" using the F5 key.

If a conflict exists "*** Conflicts**" will appear in the upper right corner of your screen. This means the sound card and another adapter in your system are configured to use the same address or dma arbitration level. You will have to change the settings of the other conflicting adapter. Use the F5 key to change adapter settings.

The sound card settings are not changeable because many software programs assume and require these settings to operate properly. Refer to the Technical Specifications for the settings.

Use F10 to save any changes.

Press F3 to return to the "Set Configuration" menu

Press F3 to return to the MAIN configuration menu

Remove the Option Diskette from 'A' and press 'ENTER' to restart the computer.

SOFTWARE INSTALLATION

Installing software support for your operating system

The sound card comes with comprehensive driver support for various operating systems. You must install sound support for your operating system to be able to use the sound card. To provide the most up-to-date information, the instructions for installing software are contained in document (*.DOC) files on the sound card's Disk-1. Please read and follow the instructions in the appropriate document file. You can view and print these files by typing "README" from the floppy drive that contains Disk-1.

DOS.DOC	Installing support for DOS
WIN31.DOC	Installing support for Windows 3.1
WIN95.DOC	Installing support for Windows 95
WINNT.DOC	Installing support for Windows NT
OS2.DOC	Installing support for OS/2
AIX.DOC	Installing support for AIX
FAQ.DOC	Troubleshooting
HELP.DOC	Who to contact for Help

Using Applications with the sound card

Some software require you to setup the application with the address, interrupt and DMA channel of your sound card. Always select the following:

Sound Address: 220 Interrupt: 7 (or 5 if soundcard is changed - refer to FAQ.DOC) DMA: 1

MIDI Address: 330 (WaveTable)

Special Note for DOS applications

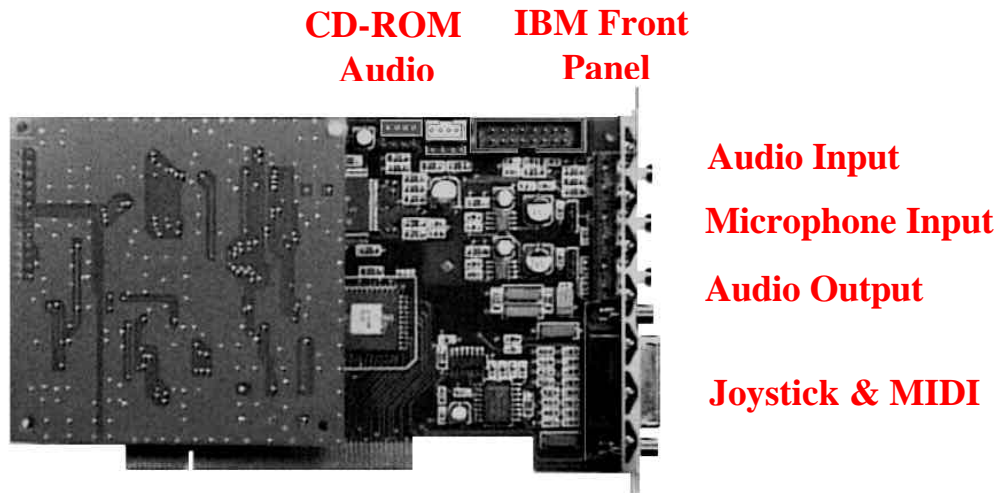
When you install DOS support using the instructions in DOS.DOC, several DOS specific DOC files are created. These files contain important information about setting up your DOS applications for sound, and the use of DOSMIXER for games.

Troubleshooting

The document file FAQ.DOC on Disk-1 contains "Frequently Asked Questions" that may be helpful for troubleshooting any problems you may have.

CONNECTING INPUT & OUTPUT DEVICES

The sound card supports industry standard connections to audio devices, joysticks, external Midi devices, CD-ROM audio, and IBM front panel MultiMedia systems.



ChipChat Sound Card

AUDIO DEVICES

The sound card supports industry standard 3.5mm audio plugs for stereo line in, microphone in and stereo line/headset out. Use caution when connecting sources that your audio volume is at a safe level.

AUDIO INPUT

Using a standard 3.5mm (1/8") audio cable, you can connect other devices "Audio Out" to the "Audio In" of the sound card. This connection will allow you to record audio from another device onto your computer's hard disk. You should only connect Line Level signals into the sound card's "Audio In". Typical Line Level "Audio Out" devices are your tape player, CD player, VCR audio out, etc. You should not connect an amplified signal into the "Audio In". Typical amplified signals that are inappropriate connect to speakers. Refer to the sound card's technical specifications in this manual for maximum input settings.

CONNECTING INPUT & OUTPUT DEVICES

MICROPHONE INPUT

You can connect a microphone into the sound card for live recording. The microphone needs to have a 3.5mm (1/8") plug. The plug can be either stereo or mono. The sound card only requires a mono microphone. A stereo microphone can be used, but only one channel will be recorded.

AUDIO OUTPUT

Using a standard 3.5mm (1/8") audio cable, you can connect other devices "Audio In" to the "Audio Out" of the sound card. This connection will allow you to playback audio from the sound card into another device. Typical "Audio In" devices are an amplifier for external speakers or tape recorder. You can also connect the sound card's "Audio Out" to a set of stereo headphones for private listening. The sound card is not designed to drive large external speakers directly. If you connect to speakers, you should go through an amplifier first, or use speakers that have their own amplifier.

JOYSTICKS

The game port connector accepts the standard DB15 plug used on all joysticks. Some software applications use dual joysticks. The audio adapter supports dual joysticks through the use of a game port splitter cable. This cable is an industry standard and is generally available at most computer stores. The joystick splitter cable is a single DB15 plug for attaching to the sound card that splits into two DB15 sockets to allow connection of two joysticks.

MIDI DEVICES

In addition to providing connection to joysticks, the DB15 connector also contains the MIDI IN and OUT signals. These signals are generally used by musicians to connect to external MIDI keyboards or other instruments. To gain access to these signals requires a joystick/MIDI break-out cable. This cable is an industry standard and is generally available at most computer stores. The joystick/MIDI break-out cable consists of a single DB15 plug for attaching to the sound card that splits into a DB15 socket to accommodate a joystick and two 5 pin din connectors - one for MIDI IN and the other for MIDI OUT.

CONNECTING INPUT & OUTPUT DEVICES

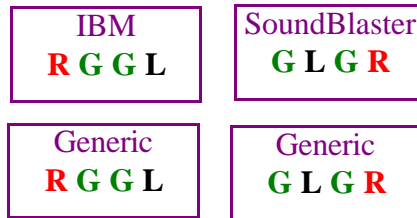
CD-ROM AUDIO

The ChipChat Sound Card can accommodate both internal and external CD-ROM audio devices.

Internal CD-ROM drive

If your computer has an internal CD-ROM drive, you can connect the audio of the CD-ROM drive to the internal connector on the sound card. This will allow you to hear the sounds playing from CD-ROM disks and standard music CDs. On the back of your internal CD-ROM drive, there is generally a connector for CD-Audio. This connector is usually a single row of three (1x3) or four (1x4) pins. CD-ROM audio cables are unique for particular CD-ROM drives and are generally available in most computer stores. The audio card provides a couple of CD-ROM audio connectors for the most popular configurations. Most CD-ROM audio cables have a SoundBlaster type of connector and should work fine.

The CD-ROM Audio connectors on the sound card
(view from front component side of card)



* The IBM connector is a special connector used by IBM in some of their MultiMedia PS/2 systems. This connector is now obsolete and may not be on your sound card.

External CD-ROM drive

If your computer has an external CD-ROM drive, you can connect the audio from the CD-ROM drive to the Line-In of the sound card. Normally this requires a 3.5mm stereo cable. You can connect the cable from the headphone output jack on the front of the CD-ROM drive to the Audio Line In on the sound card. If you connect your CD-ROM audio this way, remember that now when you use the audio mixer, the setting for "Line In" will be for your CD-ROM audio and the "CD-Audio" mixer selection will be un-used. The "CD-Audio" setting in the audio mixer is for an internal CD-ROM audio connection.

CONNECTING INPUT & OUTPUT DEVICES

IBM UltiMedia Front Panel

IBM UltiMedia PS/2 systems equipped with Front Panel Audio (e.g. M57, M77) can directly connect to the audio card's Front Panel connector. The front panel cable included with the PS/2 are keyed with pin 14, and can only be connected one way.

Front Panel Connector Pin-Out
(viewed from front component side of card):

2	4	6	8	10	12	14	16
1	3	5	7	9	11	13	15

Note: PIN 14 is missing

ORDERING INFORMATION

For ordering refer to the following items and part numbers.

<u>Item</u>	<u>Part Number</u>
ChipChat Sound-16	12316
Wave Table Upgrade	12324
ChipChat Sound-32 with Wave Table	12332
ChipChat User's Guide & Software	12310

OPTIONS

The -16 sound card comes standard with an enhanced 20 voice 4 operator FM music synthesizer. The synthesizer provides the background music for games and presentations. An optional WaveTable add on card is available that provides incredible CD-Quality music synthesis with 32 voice polyphony for stunning sound reproduction. Whereas FM synthesis combines sine waves to emulate various instruments, WaveTable synthesis uses actual instrument samples. When it comes to the highest quality sound reproduction, WaveTable has no equal. If you purchased the -32 sound card, you already have the advanced WaveTable Synthesizer. If you have the -16 sound card without the WaveTable option, then contact ChipChat for an upgrade and prepare yourself for some incredible game playing action and unequaled professional presentations.

ChipChat - Technology Group
24224 Michigan Avenue
Dearborn, MI 48124 USA

Phone: (313) 565-4000 Fax: (313) 565-4001

Internet World Wide Web <http://www.ChipChat.com>
E-Mail SoundCard@ChipChat.com

TECHNICAL SPECIFICATIONS

Audio Characteristics:

- Sampling Resolution:	8 and 16 bit
- Sampling Rate:	4KHz - 44.1KHz
- Dynamic Range:	16 bits resolution
- Frequency Response	20Hz - 20KHz, 3 dB
- Signal to Noise Ratio:	80 dB
- Audio In Input Impedance:	30K ohms
- Audio In Input Signal Level:	1.41 vrms
- Microphone Input Impedance:	20K ohms
- Audio Out drive	>4 ohms

Connectors:

Audio In	Mini-phone jack (3.5mm)
Microphone In	Mini-phone jack (3.5mm)
Audio Out	Mini-phone jack (3.5mm)
Joystick/MIDI	DB15F
CD-Audio	SoundBlaster and IBM (Shrouded Pin Header, 1x4, 2mm)
	Generic (Pin Header, 1x4, 1/10 inch)
IBM Front Panel	Pin Header, 2x8, 1/10 inch

Software Setup values:

Sound Address	220
Interrupt Level	7
DMA Arbitration Level	1
General MIDI MPU-401 Address	330

Computer Resources:

Address (hex)	200-20F, 220-22F, 388-38B, 330-33F
Interrupt Level	7
DMA Arbitration Level	1

WARRANTY

Definitions:

ChipChat is ChipChat / 24224 Michigan Ave. / Dearborn, MI 48124 USA - www.ChipChat.com

Warranty:

With respect to the product(s) delivered with this Limited Warranty, ChipChat warrants to the original purchaser that:

- (i) the product manufactured by ChipChat will be free from defects in materials and workmanship for ninety (90) days from the date of delivery to original purchaser
- (ii) any software and firmware is provided "as is" without warranty of any kind.
- (iii) any components not originally supplied by ChipChat are without warranty of any kind by ChipChat. Use of components and accessories that do not conform to product specifications may void the warranty.

THE FOREGOING WARRANTIES ARE THE ONLY WARRANTIES PROVIDED BY CHIPCHAT IN CONNECTION WITH THE PRODUCTS COVERED BY THIS LIMITED WARRANTY AND ARE IN LIEU OF ALL OTHER WARRANTIES WHETHER EXPRESS OR IMPLIED. CHIPCHAT HEREBY DISCLAIMS ALL OTHER WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

If any product delivered with this Limited Warranty is non-conforming or defective during the applicable warranty period, ChipChat will, at its option, either repair or replace such non-conforming or defective product, or return the purchase price to purchaser. Any product delivered with this Limited Warranty has been thoroughly tested and is thought to be functional when released. In the event that a serious functional problem is discovered in any product delivered with this Limited Warranty, ChipChat may endeavor to correct such problem. ChipChat shall have no obligation hereunder if any product delivered with this Limited Warranty has been misused, carelessly handled, defaced (including unauthorized repairs made or attempted by others), modified or altered. the product must be returned with proof of purchase in its original packaging (or other adequate packaging) to the point of purchase or, by prior arrangement with ChipChat, to ChipChat. Claims must be made in accordance with the provisions of this paragraph within the applicable warranty period or they will be barred.

If ChipChat determines that any product which has been returned to ChipChat in accordance with the provisions of the preceding paragraph is not under warranty, it will be repaired using ChipChat's standard rates for parts and labor. ChipChat will use its best efforts to repair the product after receipt thereof. ChipChat shall not be responsible, however, for delays caused by shipping or non-availability of replacement components or other similar or dissimilar causes, events or conditions beyond its reasonable control.

THE FOREGOING STATES THE PURCHASER'S EXCLUSIVE REMEDY FOR ANY BREACH OF THIS LIMITED WARRANTY AND FOR ANY CLAIM, WHETHER SOUNDING IN CONTRACT, TORT OR NEGLIGENCE, FOR LOSS OR INJURY CAUSED BY THE SALE OF ANY PRODUCT. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, CHIPCHAT SHALL IN NO EVENT BE RESPONSIBLE FOR ANY LOSS OF BUSINESS OR PROFITS, DOWNTIME OR DELAY, LABOR, REPAIR, OR MATERIAL COSTS, INJURY TO PERSON OR PROPERTY OR ANY SIMILAR OR DISSIMILAR CONSEQUENTIAL LOSS OR DAMAGE INCURRED BY PURCHASES, EVEN IF CHIPCHAT HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSSES OR DAMAGES. CHIPCHAT'S SOLE AND EXCLUSIVE MAXIMUM LIABILITY TO THE PURCHASES SHALL BE LIMITED TO THE PURCHASE PRICE OF THE SOUND CARD.

Support: ChipChat will provide telephone support to the dealer or end user for the sound card. This support expires 90 days after shipment of this package from ChipChat. Additional support and product updates may be purchased from ChipChat.

General: This license is governed by the laws of the State of Michigan. This license constitutes the entire agreement between you and ChipChat. It cannot be modified except in writing signed by an officer of ChipChat

SERVICE INFORMATION

ChipChat - Sound Card Technical Support
24224 Michigan Ave.
Dearborn, MI 48124 USA

Phone: (313) 565-4000 / Fax: (313) 565-4001
E-mail: SoundCard@ChipChat.com

Service Guidelines

Should your product require factory service, the following guidelines will help you get the fastest service. For all factory service the following guidelines must be followed:

- (1). Save your sales receipt. You must submit proof of purchase for in-warranty repair.
- (2). Contact ChipChat or your dealer to obtain a Return Material Authorization (RMA) number prior to sending the unit to ChipChat. This RMA must be displayed on the box.
- (3). Return all the components with your RMA. Complete troubleshooting is impossible if all components are not included. For protection against damage in transit, repack the system in its original packing materials.
- (4). Damaged and abused products will be repaired out of warranty only. Unauthorized repair attempts, dropping, submitting to electric surges, etc. will void the warranty.
- (5). Ship the unit to ChipChat freight prepaid. After in-warranty service, the unit will be returned freight prepaid by a carrier designated by ChipChat. Use of any other method will be freight collect or imposed shipping charge. Out-of-warranty service, the unit will be returned freight collect or imposed shipping charge.
- (6). Cosmetic damage will not be repaired in warranty.

Note: Policies may change without notice.