**Audio Card on a Chip™ Design**

- Complete set of audio functions
- Single chip implementation

**General Functions**

- Sound Blaster® Pro games compatibility
- S3FM™ games-compatible FM synthesis
- General MIDI synthesis
- Microsoft® DirectSound™ acceleration via high speed PCI bus
- Microsoft DirectMusic™ accelerator
- InfiniPatch™ downloadable samples using system RAM
- SRS® 3D audio enhancement

**Advanced Wavetable Synthesis**

- 32 oscillators for General MIDI wavetable synthesis
- Channelized reverberation and chorus
- Hardware MIDI interpreter
- General MIDI compliant 1 & 2 MB FAT Labs™ sealed patchsets

**Analog Features**

- Single, true 16-bit  $\Sigma\Delta$  stereo codec for reduced analog circuitry
- Sophisticated sample rate conversion for high quality digital mixing (patent pending)
- InfiniRate™ full-duplex operation with independent playback/record rate (4 to 48 kHz)
- Automuting after periods of digital silence
- Complex analog mixer for PCM, Wavetable, FM plus MIC and 4 stereo external analog sources exceeds MPC3 requirements

**System Interface Options**

- Glueless master/slave PCI 2.1 for high performance PC audio system
- Distributed DMA support for hardware legacy support

**Extensive User Hardware Interface**

- 16 levels, speed compensated joystick timer and interface
- MPU-401 MIDI UART for external devices
- Hardware master volume control
- AUX1, AUX2, CD, Line In and MIC inputs
- Lineout to amplified speakers

**Software Support**

- Windows® 95 driver
- Windows NT™ driver
- DOS and Windows installation program
- DOS configuration utility and mixer applet
- 3rd party SonicVibes-enabled audio applications

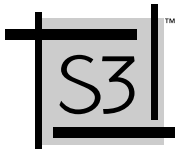
**QuickRamp™ Manufacturing Package**

- Reference design schematics with BOM
- Gerber files
- PADS® layout files
- Software drivers and applications
- Documentation

**Single Crystal Operation at 24.576 MHz****Advanced Power Management 1.2 Compliance****160-pin PQFP or 176-pin TQFP Package**

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The single chip S3<sup>®</sup> SonicVibes<sup>™</sup> is a PCI-tuned mixed signal audio signal processing accelerator for high integration, high quality PC product designs.

The single chip provides all the audio functions normally found on a sound card and provides them with higher quality. The bus master PCI interface ensures extremely low system overhead for audio data transfers, allowing use of system memory for storage of MIDI patchsets instead of a dedicated ROM. It also enables downloadable samples as expressed through Microsoft DirectMusic using system memory resources and S3's InfiniPatch technology. Real mode applications are supported through DDMA (Distributed DMA).

The high quality audio codec provides well integrated yet uncompromised 16-bit  $\Sigma\Delta$  analog-to-digital and digital-to-analog conversions. The codec feeds a low distortion, complex mixer. The post-mixer SRS stereo expansion and 3D surround simulation increases the high quality audio experience even on regular speakers.

All the memory needed for data and program of digital signal processing is integrated within the chip. This and the other integrated features minimize the logic required for a complete audio solution.

