A **codec** message

In a step-by-step picture guide, Panicos Georghiades and Gabriel Jacobs show you how to set up audio codecs in Windows 95. Plus, your multimedia queries answered.

We have lots of your queries to catch up with this month, so let's make a start by dealing with a question sent to us by Peter Kenny. He writes: "*Your article, in the October issue, referred to a number of compressed sound-file formats. I was interested in the GSM format which is, indeed, listed under Multimedia Properties in my Windows 95 system. However, when I tried to play the GSM sample from the CD-ROM on my system, nothing happened, although all the other samples seemed to work. Do I need to do anything to install the GSM codec in my system?*

"The reason for my interest in GSM is not altogether to do with multimedia, but rather because my data/fax/voice modem (US Robotics Sportster) records all voice messages in files with a .GSM extension. I have been trying to find out about the layout of these files because I want to translate them into .WAV files that I can play through my SoundBlaster-16 card. USR has been very unhelpful. Do you know whether these files are in the GSM format described in your article, or where I can get at any documentation of GSM (preferably on the internet)?"

You can check whether the GSM compressor has been installed on your system by clicking on the multimedia icon in the Control Panel and looking under the list of audio codecs. If it's not there, you can install it from the Win95 CD-ROM. If it is there, you can check its configuration settings by clicking on it. Our file is 44.1kHz, mono. The setting for decompression should be set to All rates.

GSM stands for Global System (for) Mobile (Communications) but the initials are taken from its earlier, French, name: *Groupe Special Mobile*. The Windows 95 bumph states that GSM compresses and decompresses audio data conforming to the ETSI-GSM (European Telecommunications Standards Institute — *Groupe Special Mobile*) recommendation 6.10. The GSM 6.10 is a speech encoding system, used in Europe, that compresses 160 13-bit samples into 260 bits (or 33 bytes) — that is, 1,650 bytes/sec (at 8,000 samples/sec). A free implementation can be had on the net using ftp from **tub.cs.tu-berlin.de, file /pub/tubmik/gsm-1.0.tar.Z.**

Additionally, there are two US standards: 1016 (Code Excited Linear Prediction, or CELP, 4,800 bits/sec) and 1015 (LPC-10E, 2,400 bits/sec).

The GSM files created by your modem are probably of genuine GSM format, since GSM compression was made for telephony. But you really need to contact the people who wrote the software that comes with your modem and which creates those files, if you wish to decipher them yourself. We assume that your software doesn't have an option to convert them into WAV files. Some similar software, such as SuperVoice, does this for you.

You'll find many web sites offering GSM-to-WAV conversion programs. Do a Boolean search on GSM and WAV.

A useful reference

"*I work for a company that produces electronic books consisting mainly of text and still graphics. We are very keen to offer more video and sound in our products, but are having difficulty in locating anyone who can provide a digitising service. I would therefore be extremely grateful if you could send me a list of suitable companies.*"

Paul Cox, Oxford

See the *PCW* September issue for our review of the *Multimedia and CD-ROM Yearbook*, which contains about 1,400 businesses in the UK providing multimedia products and services. (See the "PCW Contacts" box, page 314, for details.)

Sound-card choice

"*I bought your book on MIDI, published by the Sigma Press in 1990, and I've been following the advice given in your column here in* PCW, *but I really need some help with specific questions. I've recently switched from being mainly a Mac user to owning a plug-and-play Win95 Pentium PC with Adobe Premiere, 3D Studio, and Animator Studio. I also have Roland kit from the cheap end of the range (CM32).*

"I want a sound card with good built-in wavetable sounds, versatility, stable performance and a dependable MIDI interface. Sampling is something I'd like to do, but this is only one priority.

"I've read that some cards don't have hardware MIDI interfaces but use a software TSR to emulate it. This can cause MIDI sounds to fail if another TSR overwrites it. I've also read that cards without hardware FM synthesis emulate SoundBlasters in software — that seems like asking *for setup headaches and conflicts. Although the option of digital output sounds useful, I don't know how I'd use it.*

"I'd appreciate your guidance on what to buy, and I should say I've not seen straightforward buying advice in any *computer magazine. Nevertheless, I've got a shortlist of five with some 'Fors and Againsts' that I've gleaned from reviews: it is as follows:*

1. Turtle Beach TBS2000. Good sounds, good track record, but software MIDI interface. No daughterboard connector. Not easy to get hold of and a bit pricey.

2. SoundBlaster 32. Reasonable price for average sounds, RAM for sampling, good support (I think). Many users, digital output, but software MIDI. No sequencer supplied and no daughterboard connector.

3. SoundBlaster AWE-32. As above, plus reasonable software and daughterboard connector but overpriced (in my opinion). Perhaps about to be replaced, and due for better synth chip?

4. Orchid NuSound. Good price, average sounds. Good package. Hardware MIDI, daughterboard connector (Orchid's board is only about £20) and NuPanel control panel. But sounds are not the best. No sampling, no digital output and perhaps due for a new card with sampling?

5. Gravis Ultrasound PnP. Good price for good sounds. Sampling, reasonable track record, hardware MIDI but no daughterboard connector. Software perhaps not as good as AWE and not so widely used. SoundBlaster emulation in software.

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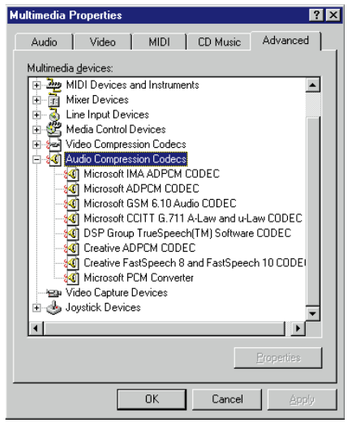
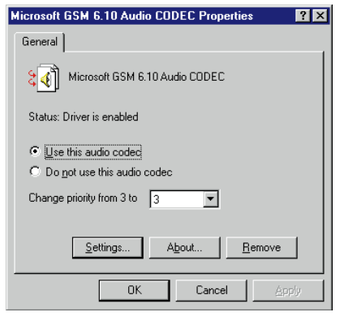
Setting up audio codecs in Windows 95 — your step-by-step guide

Step 1 (left) Open Multimedia in the Control Panel and select Advanced

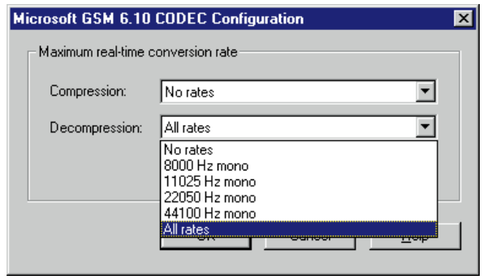
Step 2 (below) Select GSM audio compressor from the Audio Compression Codecs





Step 3 (left) Click on Settings

Step 4 (right) Use the Auto-configure button to set the Compression setting for your card and manually set the Decompression setting to All Rates. You can do this for all the other codecs



"And, while I'm asking questions: is an alternative to having a card with sampling, having an expensive sequencer which will mix synth sounds with digital audio sounds? I don't suppose it is because other software (games, Animator Studio) won't be able to play back a mixture of the two as the sequencer can."

Robert Wood
Open University

Lots of questions! We'll try and answer most of them. And thanks for those mini-reviews, although we can't comment on all the details.

Firstly, we should say that some of the views given in the articles in the magazines you've been reading are a bit dated and, frankly, not worth bothering about. Eleanor Turton-Hill's group test of sound cards (*PCW* April '96) is more up to date.

There's no need to worry about FM emulation and MIDI TSR emulation. These are related to programs running under DOS or strictly using the hardware MPU MIDI interface standard. Most cards come with Windows drivers which override, and/or render useless, any DOS drivers and settings.

The TBS2000 has the same kind of interface as the AWE-32. You can get it from Millenium Music, Tech-mate, Turnkey (see the "PCW Contacts" panel for details) and any of the Byte superstores.

The plain truth is that you won't find a single card that will do everything you want at the best quality. The best overall card which has most of what you want is the AWE-32 (the full version rather than the budget item) at about £170 (plus VAT), which is not expensive for what it offers. It's true that the on-board sounds are a bit thin, but they're no worse than the other cards you mention. A new version (AWE-64) will be out sometime in January with 64-note polyphony. An additional (more expensive) model, the AWE-64 Gold, featuring instrument modelling, will also be available in the New Year.

The best wavetable sounds we've heard on a PC card can be found on the Yamaha DB50 daughterboard (£129) which has an excellent MIDI implementation. You see, it's not just the quality of the samples, but also how much control you have over them during playback — if you want your music to have some expression, that is.

Sequencers need not be expensive nowadays to incorporate audio as well as MIDI tracks. Only if you want to manipulate your own original sounds as musical instruments (change the pitch and so on) do you need a card that handles sampling. The AWE-32 can use up to 28Mb of RAM, and there are lots of CDs with sounds for it. Steven Helstrip has reviewed some in his Hands On Sound column.

You only need a card with digital In/Out if you want to communicate with digital equipment such as an audio DAT machine. You should note that most digital cards are more expensive and don't have MIDI sounds on them.

To avoid setup headaches, go for a card for which the drivers have been around and well-tested for some time.

Dear Santa...

Before getting on to our Christmas wish list, let's take a brief look back at 1996. For us, it has been a year when computer companies have actually believed their own hype. Consequently, they have devoted huge efforts and resources to developing products for the internet. For instance, most multimedia authoring programs have had new features added to them, allowing users to create multimedia applications for the net. It has been our job to report on many of these, and in most cases we've been amused rather than impressed. Sorry, but the truth is that if you want multimedia, forget the internet. It's too slow even for still pictures, let alone sound and video. If you want to enjoy multimedia, get it on CD-ROM. Even when everyone has cable lines — with the 17Gb storage of a double-sided DVD (when it's out, if ever) — it will be decades before the internet can deliver comparable performance.

- We wish the hype over multimedia on the internet would simply stop. Last year, one of our wishes was for full-screen video. So how far have we got? The new version of Adobe Premiere boasts support for 32 x 32 pixel video output for use on the net, and we bet that kids are asking their parents for a magnifying glass for Christmas so they can view it!
- While on the subject of the net, we wish that web page designers would stop trying to show off and use less video and graphics so that pages would display faster. If you opt not to display graphics, you're left with an awful feeling that you might have missed something. We simply wish they would cut out the gizmos. After all, when you've seen one, you've seen them all.
- We wish that Windows wouldn't ask us to press OK when there's nothing else to press and things are very far from OK.
- We wish that when you get the message Abort, Retry, Fail, and you select Retry, something would actually happen other than the same message appearing again and again, until you press Abort or Fail.
- We wish there was more hardware compatibility. We've spent more days sorting out hardware incompatibility problems with Windows 95 in the last year than we care to contemplate — Plug-it-in 'n Play "solve the problem".
- We wish there were new typefaces designed specifically for reading text from a computer monitor, and that all programs (especially multimedia authoring tools) would anti-alias fonts on-the-fly.
- We wish (every year, not just this one) that companies and organisations would stop announcing products before they have dreamed of them. CD-X and DVD were announced ages ago. Where are they? And where are the large flat-screen LCDs which we can hang on our wall — the ones we were promised last decade?
- We close our eyes and wish hard for no more answerphones on customer support lines, and no more "musak". We want to talk to *real* people at the other end — people who know what they're talking about.
- We wish for more and cheaper electronic pens to replace mice.
- And finally, we wish that computer companies would concentrate on delivering what customers want, as they used to in the eighties, as opposed to concentrating on buying each other out, as they have been doing over the last five years. They've been so busy eliminating competition that they've brought stagnation to the computer industry; something which inevitably happens when there aren't enough manufacturers around.

■ *Please note: this is the last Multimedia column to be included in the Hands On section of PCW, but you will still be able to read all about the various aspects of multimedia in other parts of the magazine. Panicos Georghiades and Gabriel Jacobs will continue to write for us from time to time.*

•PCW Contacts

If you have any queries, or interesting multimedia-related topics to discuss, we'll be pleased to hear from you. You can contact us at **g.c.jacobs@swansea.ac.uk** or **panicos@dial.pipex.com**

The Multimedia and CD-ROM Yearbook Macmillan General Books 0171 881 8000

TBS2000 soundcard Millenium Music, 0115 9552200; Tech-mate 01206 793355; Turnkey 0171 379 5148