

on the computer, although those skilled in the art will recognize that this determination could alternatively be made by an application program or an operating system that provides such capability (e.g. Windows® 98). If the computer's power switch was used to turn on the computer, then the system boots to normal operation mode, at step 203, and the normal operating system (e.g., Windows® 98) is loaded into system RAM 30 and executed. If an audio player power switch 54 was used to turn on the computer, the mini-OS is loaded into system RAM 30, at step 204. At step 205, the mini-OS initializes the system components including one or more of the North Bridge 28, South Bridge 32, special purpose circuit 40, hard drive 36, CD-ROM drive 38, codec 42, and CPU 26.

[0062] Since no audio decompression request will be pending upon system initialization (i.e., the memory buffer is not full), which determination is made at step 208, the system waits for input from one of the function keys 48, at step 207, until one of the function keys 48 is pressed, at which point the appropriate function is executed and the LCD display updated, as appropriate, at step 206. If the command includes a request from the user to play audio, an audio decompression request will be pending at this time, which determination is made at step 208. Since no compressed audio file(s) are in system memory 30 upon the initial request to play audio, which determination is made at step 209, the compressed audio file(s) are read from the HDD 36 and/or CD-ROM drive 38 and/or portable memory media 80 and loaded into system memory 30, at step 210. After the compressed audio files are loaded into system memory at step 210, or if the audio file(s) are already in system memory, which determination is made at step 209, the audio files are then decompressed, at step 211, using the system CPU 26. DMA transfer(s) to the codec 42 are initialized for the decompressed audio data, at step 212, and then the output signal from the Codec 42 is amplified (not shown in FIG. 2) by the amplifier 44 to drive the speakers and/or headset 46. After the DMA transfer(s) are initialized, at step 212, control loops back to step 208, to determine whether an audio decompression request is pending.

Playlist Software Operation

[0063] FIG. 5 is another generalized overall block diagram of an exemplary system 31 consistent with another embodiment of the present invention. In this exemplary embodiment, the system 31 includes portable memory media 80 that can be used to hold the playlist data and/or compressed file data. The memory media 80 can be Smart-Card media, Memory Stick media, PCMCIA memory media and/or other portable media known in the art. If the system is ON and media is detected as being present at the portable memory media location (e.g., by insertion of a Smart Card, PCMCIA, CardBus card, Memory Stick or other media into an appropriate slot), the memory reader generates an interrupt to the South Bridge 32. The special purpose circuit 40 of this embodiment also receives the interrupt and generates a command to tell the operating system to launch an appropriate application (e.g., Windows Media Player) to read the playlist data on the memory device 80. In this instance, the application takes control to read the playlist file and retrieve the audio data, either from the memory device 80 or some other location specified in the playlist file. Similarly, when the mini-OS is operational, the special purpose circuit 40 is

adapted to check if a memory device 80 is present, and to scan the device for playlist data. The system then operates as described above.

[0064] The playlist file, as described herein, is a generalized data file that is constructed by a user having a desired MP3 song sequence. The playlist file also includes disk path information to instruct the application as to where to locate the desired MP3 data. Certain operating systems permit users to change drive letters on-the-fly. Accordingly, the playlist software reads the volume serial number (VSN) given by the operating system to a particular drive. The serial number does not change (unless intentionally changed by reformatting the drive), and thus, the playlist software can track the playlist data regardless if the user reassigns a particular drive letter. This feature also works similarly with switchable devices such as disk drives.

[0065] It should be recognized by those skilled in the art that, although the above-described embodiments utilize a hardware-based OS selection (i.e., pressing main power button boots to Windows®, while pressing audio control button boots to mini-OS), other OS selection methods are contemplated, as well. Such selection methods include, e.g., using a batch file or other scripting or software-based method to shut down a first OS and boot to the second OS. Those skilled in the art will also recognize that the mini-OS of the present invention could conceivably be implemented as part of a larger OS (e.g., a GUI-based OS, such as Windows®, LINUX, etc.) or as a software component named something other than an "operating system", (e.g., a "driver", an "algorithm", a "script", "code", a "program", an "executable", a "routine", a "subroutine", a "utility", etc.), instead of being implemented as an entirely separate operating system. Such embodiments are contemplated to be within the scope of the present invention.

Software Operation

[0066] Turning to FIG. 6, a generalized block diagram of another exemplary computer system 600 consistent with the invention is illustrated. The computer system 600 is somewhat similar to the earlier described embodiments of FIGS. 3-5, except that the system 600 employs a purely software solution for operation of the system 600 in compressed audio mode instead of utilizing the special purpose circuit 40 (hardware) as previously described. As such, the software solution enables the system 600 to have all the functionality, including operation of a PC in compressed audio performance mode, of all the embodiments of the invention as previously described.

[0067] The computer system 600 includes all the conventional components detailed earlier with respect to FIGS. 3 and 5 and hence any repetitive description of those components and their operation is omitted herein for clarity. In addition to those earlier described components, the computer system 600 includes a conventional keyboard controller 604 adapted to interface with the audio control buttons 48, LCD 34, and the keyboard 606.

[0068] Operation of the computer system 600 in audio compressed mode is controlled by audio software adapted to be executed by a processor. As such, operation of such audio software requires the processor and a machine-readable medium. The processor, e.g., CPU 26, can be any type of processor capable of providing the speed and functionality