as a sound source board 41 or an extension board as shown in Figure 2. In this case, the board 41 is inserted into a slot on a main board or mother board. The sound source board 41 communicates with the CPU 10 through the bus 12, I/F controller 26, and extension interface 27. The waveform memory 25 may be installed through a socket provided on the sound source board 41 in this arrangement. Additionally, the extension interface 27 may be provided with an additional D/A converter 28. Otherwise, the sound source 22 may be provided in the form of a discrete LSI chip, or mounted on the daughter board. The chip or daughter board is installed through a socket provided on the mother board or extension board in this arrangement. Similarly, the DSP 21 may be provided in the form of a DSP board 42. In this case, the DSP 21 communicates with the CPU 10 via the extension interface 27. Otherwise, the DSP 21 may be provided in the form of a discrete LSI chip likewise the sound source 22. The input data is transferred to the D/A converter 23 through the bus 12 in Figure 1. However, the data can be distributed directly or through the extension interface, if the DSP 21 or sound source 22 is installed through the socket or the extension interface.

[0012] As shown in Figure 3, a first waveform generator or sound source system 32 comprised of the sound source 22 or the DSP 21 can be connected to a local bus 33, through which the data is transferred to and from a CPU system 30 without using the data bus 12. The CPU system 30 is composed of a standard arrangement including the CPU 10, ROM 11 and RAM 13, while peripheral devices 31 include multi type I/O port 14, storage unit 15, and miscellaneous interfaces and operators. The sound source system 32 is specifically composed of the discrete sound source 22 or DSP 21 in the embodiment. However, in general, any functional elements for the musical sound generation are involved in the sound source system 32. The sound source system 32 may be integrated with or separated from the CPU system 30. Further, the connection interface can be provided at either of the CPU side and the sound source device side. Namely, any connection interface may be employed according to the inventive system setup. Additionally to the local bus, any sort of interface/protocol combination such as MIDI, RS-232C/422, IEEE P-1394, or SCSI may be employed. Also, communication network such as public telephone network may be used as the data communication media.

[0013] In an arrangement shown in Figure 4A, the sound source device 22 may be integrated into a single chip, or into a printed circuit board module together with the waveform memory 25 and the D/A converter 23. Similarly, as shown in Figure 4B, the DSP 21, RAM 24, and D/A converter 23 may be integrated altogether into a single chip.

[0014] The arrangements shown in Figures 1 to 3 are nothing but an example. The style of the device connection depends upon the individual system setup. Further, two or more of the functional elements shown in Figure 1 may be integrated into a single chip.

[0015] According to the invention, the above constructed musical sound generating apparatus creates a waveform to generate a musical sound according to performance information. A first waveform generator such as the sound source 22 or the DSP 21 is operable for creating a waveform. A second waveform generator composed of the CPU 10 is operable independently from the first waveform generator for creating a waveform. The I/O 14 provides performance information. One of the first waveform generator and the second waveform generator is designated in correspondence with the provided performance information. The apparatus selectively operates the designated one of the first waveform generator and the second waveform generator to create the waveform according to the provided performance information. The DAC 23 generates the musical sound based on the created waveform. The first waveform generator comprises an external waveform generator optionally connectable to the apparatus while the second waveform generator comprises an internal waveform generator integrated with the CPU 10. Occasionally, the internal waveform generator is designated in place of the external waveform generator when the same is not connected to the apparatus even though the external waveform generator should primarily correspond to the provided performance information. The second waveform generator is integrated with the CPU 10 to constitute a main part composed of a computer, while the first waveform generator alone constitutes a supplementary part which is separate from the main part and which is optionally installable in the computer. The first waveform generator is composed of a hardware module driven by the CPU 10, while the second waveform generator is composed of a software module installable in the computer.

[0016] Various operating modes in the present embodiment will be described hereunder. The operating modes of the inventive musical sound generator can be categorized, as shown in Figure 5, into two major groups, one of which relates to designation of a synthesizing method, and the other of which relates to allocation of a timbre to the different waveform generators. The two major groups are divided into more specific modes. First of all, the modes to specify the synthesizing method will be described hereunder.

[0017] In the present embodiment, the sound generation is carried out by synthesizing a waveform or wave data of a musical sound according to the performance information, and by converting it into an analog signal. The wave data can be generated in various methods. The used method is determined according to the operating mode in which the synthesizing method is specified. In the present embodiment, CPU synthesizing mode by the second waveform generator and sound source synthesizing mode by the first waveform gener-