generated beyond the limitation of the external sound source device, and various timbres can be generated. Further, various timbres can be generated also in the CPU select mode given first priority. Since the sampling frequency fs is always set to the optimum value at step Sa21, the quality of the generated sound can be maintained high.

[0049] In the embodiment described above, the optional devices are fully installed as shown in Figure 1. However, the hardware setup of the personal computer or the electronic musical instrument varies depending on which optional device is installed. The available operating mode of the musical sound synthesizing program is different depending on the hardware setup. The operations of the musical sound synthesizing program in other hardware arrangements which are different from that in Figure 1 will be described hereunder.

[0050] The hardware setup shown in Figure 21 lacks all the optional devices including the co-processor 17, DSP 21, and LSI sound source 22. Of course, the sound source synthesis mode is not available in this setup, because the detection in step Sa4 (Figure 8) becomes "Yes", and only the CPU synthesizing mode can be utilized. However, if the processing power of the CPU 10 is not very high enough, the real-time wave data computation is impossible, since both of the co-processor 17 and DSP 21 are not installed. Thus, there may be a situation in which the waveform memory readout mode is only available in the CPU synthesizing modes.

[0051] The hardware setup shown in Figure 22 has only the co-processor 17 as an optional device. In this setup, the hardware sound source synthesis mode is not affordable, because the detection in step Sa4 (Figure 8) becomes "Yes". The CPU synthesizing mode is only available. However, all the CPU synthesizing modes are possible, because high speed real time arithmetic operations are possible by the co-processor 17. The actual waveform calculation (step Sa9), as well as the trial waveform calculation (step Sa15), is executed by both of the CPU 10 and the co-processor 17 in this setup, since the co-processor 17 is available.

[0052] The hardware setup shown in Figure 23 includes the co-processor 17 and the DSP 21 as optional devices. The purpose of the DSP 21 is to ensure high speed calculation of the wave data. If the DSP 21 is treated as the external sound source, the sound source synthesis mode is available by means of the DSP on the second invocation of the synthesizing program or thereafter, since the detection in step Sa4 (Figure 8) becomes "No". However, the purpose of the DSP 21 is to facilitate data calculation, so that the wave data is not generated by the waveform memory readout method, but is generated by the various pure arithmetic modes such as FM mode, harmonics synthesis mode and physical modeling mode. Further, the CPU synthesizing mode is available depending on the allocation mode. The wave data calculation is possible, but the waveform memory readout mode is not available since the DMAC 19 and RAM 20 are deleted. It is possible to utilize only the FM mode, harmonics synthesizing mode, and physical model synthesizing mode, where the real-time high speed wave data calculation is executed. The actual waveform calculation (step Sa8), as well as the trial waveform calculation (step Sa15), is executed by both of the CPU 10 and the co-processor 17 in this setup.

[0053] The hardware setup shown in Figure 24 includes only the LSI sound source 22 as an optional device. In this setup, the sound source synthesis mode is available on the second invocation of the synthesizing program or thereafter, since the detection in step Sa4 (Figure 8) becomes "No". Further, the CPU synthesizing mode is available depending on the allocation mode. However, there may be a situation in which the waveform memory readout mode cannot be utilized, since DMAC 19 and RAM 20 are missing. Further, if the processing power of the CPU 10 is not very high enough, the real-time wave data calculation is impossible since the co-processor 17 lacks. Thus, there may be a situation in which all the CPU synthesizing modes are not available.

[0054] A second embodiment will be explained hereunder. Generally, it is difficult to reproduce the realistic sound of the percussive tones such as a rhythm or drum instrument by the wave data computation according to FM mode or harmonics synthesizing method. Thus, if the LSI sound source 22 is installed and this sound source 22 calculates the wave data of the musical sound by the pure calculating method such as FM mode other than the waveform memory readout mode, it is not adequate to reproduce the sound by the LSI sound source 22. Further, it is not necessary to calculate the wave data by the arithmetic calculating mode other than the waveform memory readout mode by the CPU 10, if this sort of the LSI sound source 22 is installed. Further, the CPU 10 should execute jobs other than the waveform synthesizing, so that a system load required for the execution of the waveform synthesizing program should be reduced as much as possible, especially in case that the processing power of the CPU 10 is not high. Thus, in this situation, it is convenient that the CPU 10 generates the percussive wave data unsuitable for the LSI sound source 22 by the waveform memory readout mode, while the LSI sound source 22 generates the wave data for other timbres. Thus, the computation load can be reduced for the CPU 10, and the LSI sound source 22 does not have to synthesize any wave data for which the sound source 22 has poor ability. The quality of the reproduced sound can be maintained high as much. The purpose of the second embodiment is directed to the very point. The second embodiment assumes that the sound source 22 is installed as shown in Figure 1 or 24. With respect to the waveform synthesizing program, the synthesizing process using the selected hardware (Figures 15 and 16) is replaced with the process shown in Figure 18. More particularly, the