provisionally operated to carry out trial creation of a model digital waveform while measuring the operation speed at which the trial creation is carried out. The sampling frequency is optimally determined in comparable to the measured operation speed. The computerized waveform generator is actually operated to enable the same to successively compute sample values of an actual digital waveform at the determined sampling frequency according to the provided performance information. The sample frequency is fixed to one of stepwise predetermined levels, which is lower than and closest to the measured operation speed. When the determined sampling frequency falls below a critical level which is defined to ensure a minimal quality of the digital waveform, the initial algorithm is changed to raise the operation speed of the computerized waveform generator so that the sampling frequency can be redetermined to exceed the critical level. The algorithm is changed from a complicated one to a simplified one such that the computerized waveform generator operates based on the simplified one of the algorithm to successively read out prestored ones of sample values to reproductively create the digital waveform. The sample values may be initially computed by the complicated algorithm. Then, the sample values are stored in the waveform memory for actual use under the simple algorithm of the waveform memory readout mode. Thus, the inventive sound generating apparatus for creating a digital waveform to generate a musical sound according to performance information, comprises input means for providing performance information, computerized waveform generator means operable based on a given algorithm at a variable operation speed to create a digital waveform by successively computing sample values of the digital waveform, trial means for provisionally operating the computerized waveform generator to carry out trial creation of a model digital waveform while measuring the operation speed at which the trial creation is carried out, determining means for optimally determining a sampling frequency comparable to the measured operation speed, controller means for actually operating the computerized waveform generator to enable the same to successively compute sample values of an actual digital waveform at the determined sampling frequency, and output means for generating the musical sound based on the actual digital waveform according to the provided performance information.

[0037] By the way, if there is detected a possible use of the hardware sound source device for the waveform synthesizing in step Sa4 in Figure 8, the procedure branches to step Sa28 in Figure 11. In step Sa28, the flag DACENBL is switched to "1" to enable the D/A converter 23 to output the sound. In step Sa29, any termination command for the sound synthesizing program is detected. If the termination of the sound synthesizing program is commanded, the synthesizing program finishes by clearing the flag SETFLG to "0" in step Sa31 through step Sa30. On the other hand, if the termination of the sound synthesizing program is not commanded, the operating mode is checked whether it is the sound source synthesizing mode or not in step Sa32, if the detection result of step Sa29 is negative. When the sound source synthesizing mode is detected in step Sa32, existence of the hardware required for the specified mode is detected in step Sa33. This mode is specified upon the recognition with the hardware check in step Sa1. If the relevant hardware exists, the synthesizing procedure is executed by the relevant hardware in step Sa34. Otherwise, the lack of the relevant hardware is issued in step Sa35, and the synthesizing process is continued using the current hardware setup, if the relevant hardware does not exist. After steps Sa34 and Sa35, the procedure returns. The synthesizing processing with the selected hardware will be described later.

[0038] The waveform loading process executed in step Sa2 (Figure 8) will be described hereunder with reference to Figure 12. In the waveform loading process, it is detected whether a MIDI sample dump command is received through the multi I/O port 14 in step Sb1. The MIDI sample dump contains a wave data according to the MIDI standard, and is used in the waveform memory readout mode. If the MIDI sample dump is received, the sample receiving procedure is conducted such that the received data is transferred to the area WAVE in RAM 13 or 20 in step Sb2. The sample dump receiving of step Sb2 is repeated until all of the data reception are completed. The completion is detected in step Sb3. If all of the data reception are completed, the detection in step Sb3 results in "Yes", and the procedure returns. On the other hand, if the check of step Sb1 results in "No", it is checked if the wave data is transferred via the interface I/F in step Sb4. If the wave data is received, the received data is transferred to the area WAVE in the RAM 13 or 20 in steps Sb2 and Sb3, as in the case of the MIDI sample dump. If both the steps Sb1 and Sb4 result in "No", an access reading event for the storage unit 15, namely the request to read out some data from the storage unit 15, is detected in step Sb5. If the request is not issued, the waveform loading is terminated immediately and the procedure returns, since there is no more job to do. On the other hand, when the access event occurs, the data read out from the storage unit 15 is checked in step Sb6. Further, in step Sb7, it is tested whether the read out data is the wave data or not. If the read out data is not the wave data, the waveform loading is terminated immediately and the procedure returns, since there is no more job to do. Otherwise, if the wave data is read out, the wave data is transferred to the area WAVE in the RAM 13 or 20. The data transfer in step Sb8 is repeated until the end of the data transfer is detected in step Sb9. When the data transfer is completed, the check of step Sb9 results in "Yes" and the procedure returns. Thus, in the waveform loading, the wave data to be used in the waveform memory readout mode is received or read out. Then, the wave data is transferred to the area WAVE in the RAM 13 or 20.