

Wave Generation Description:

The General Standard's Analog Output cards **CS-PCI-16AO16-XXXX** and **CS-66-16AO16XXX** are precision 16 channel high-speed analog output devices that operate in various voltage ranges at rates of up to 450 Kilosamples/second per channel. The Concurrent Computer Corporation kernel level drivers **WCS-CS-GS-16AO16** & **WCS-GS-66-16AO16** provide access to these cards.

This Concurrent Computer Corporation **CS-GS-16AO16-WAVE** package consists of a library and test program that interfaces with the **gsc16ao** driver to provide an easy, yet powerful mechanism for users to generate continuous and unique waveforms on any specified channels for GSC-16AO16 cards. These waveforms are supplied by the user in the form of an ASCII file that conforms to a specific format. Various user interface calls have been provided in the API located in the **libaostream.a** library.

Once the waves are running, users can perform seamless operations on them, such as varying the frequency, amplitude and bias of the data samples once the internal buffered samples have been exhausted. Capability is provided to affect these changes on a per-channel basis with a single API call. Users can similarly change waves on running channels in a seamless operation with the appropriate API calls. At any time, during wave generation, users have commands available to stop, pause and resume waves on the running channels. Additionally, the applications using this API can schedule themselves at various priorities on various targeted CPU during the opening of the wave stream.

Capability for internal or external clocking and triggering can be accomplished through this API.

There is also no limit to linking new waveform scenarios with running waveforms without affecting the operation of the running waveforms on individual channels. A single API call can then be used to terminate running waveform scenarios and start the next linked scenario.

Finally, API calls are also provided to enable debugging and printing useful wave streaming information.