Arbitrary Waveform Generator

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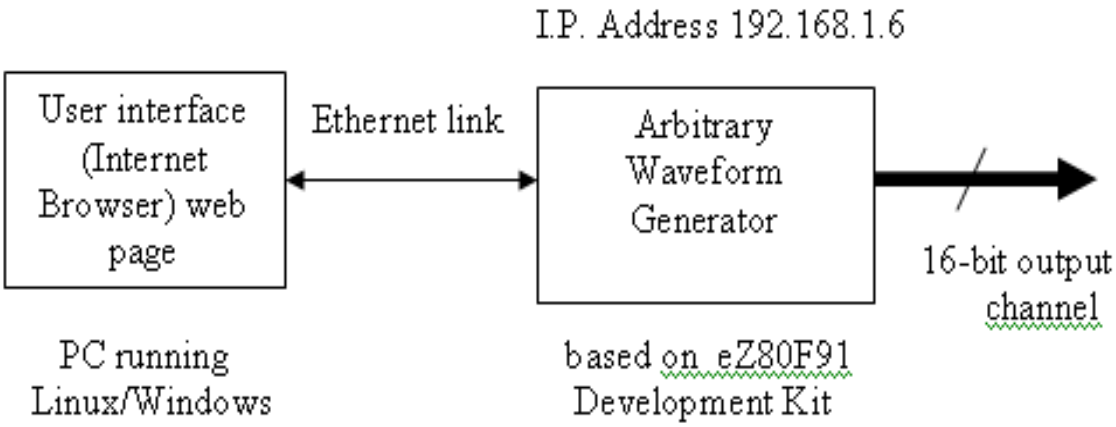
ABSTRACT

Our random waveform generator can generate any waveform. The system allows the user to input his waveform requirements in the form of a program written in notepad on a PC, using some simple rules. This program is then processed and sent over the Ethernet to the Zilog uc, where the action takes place. Facilities provided in the 'programming language' are:-

- Defining a basic logic state-duration pair.
- Repeating such blocks any number of times.
- Nesting of repeat statements.
- Defining a master chain which contains many blocks and repeat statements. The master chain can repeat itself indefinitely or terminate without any repetition.

To provide platform independence, it was decided to provide a web browser based user interface. After writing the program, IExplorer has to be started and the IP address of the Zilog board given as the URL(http://192.168.1.6 in our case). On being provided with this address, IE loads a web page from the Zilog board, which allows the user to load the program file of his choice and then "submit" it. The Zilog board receives this program over the Ethernet, compiles it using our custom compiler and generates a compact waveform table. From this an assembly code is generated dynamically generated and stored in the RAM. Now this code is executed to generates the waveform .

The working is explained in detail in the document named Details.doc.



BLOCK DIAGRAM