

An Arbitrary Function Generator Implemented with Direct Digital Frequency Synthesis Technique

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Abstract

This paper presents an arbitrary function generator implemented with Digital Signal Synthesis. Direct Digital Synthesis is a technique for using digital data processing blocks as a means to generate a frequency- and phase-tunable output signal referenced to a fixed-frequency precision clock source. We can obtain different functions with many forms. This work has two parts: software (the Direct Digital Frequency Synthesis block which is controlled by a Microcontroller) and hardware (a development board used to transform the digital signal into an analog one and, to adjust the gain and the offset).