

DDS

TM933

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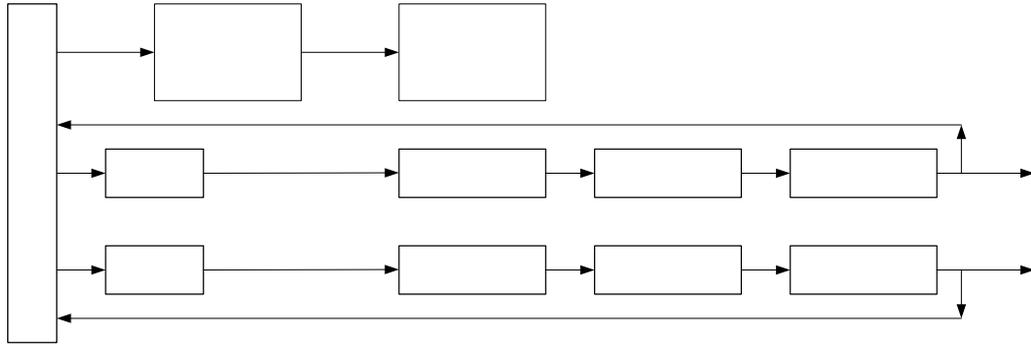
### **The research of a wide range frequency conversion standard power source**

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**Abstract:** Nowadays frequency conversion technology is widely used but the measurement of frequency conversion energy is blank. The paper presents a new design of wide range frequency conversion standard power source, which is widely used to measure and test product performance. Two DDS are used as signal generators, which individually generate voltage signal and current signal of certain frequency. The signal control switch mode power amplifier, which drive linear power amplifier, Then voltage and current are output. The voltage and current are measured and the signal are feed back to main controller, which control the output using PI arithmetic to keep the effective value of the output voltage and current steady. The experiment result shows that the system run stable and the precision of output voltage and current reached 0.1 grade.

**Key words:** standard power source, frequency conversion, Direct Digital Synthesizer



$$f_{vco} = f_0 \frac{M}{N}$$

$f_{vco}$

$f_0$

20 ns

DDS

