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NATIONAL METROLOGY TECHNICAL SPECIFICATION OF THE

PEOPLE'S REPUBLIC OF CHINA

JJF 1902-2021

Calibration Specification for Time Interval Generators

时间间隔发生器校准规范

(English Translation)

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Introduction

This specification is based on JJF 1001-2011 "General Metrology Terms and Definitions", JJF 1071-2010 "National Metrology Compilation of Calibration Specification Compilation Rules and JJF 1059.1-2012 "Evaluation and Expression of Measurement Uncertainty".

This specification is a revision of JJG723-2008 "Time Interval Generator". The main

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revisions are as follows.

---According to JJG2007-2015 "Time and Frequency Measuring Instruments", the frequency accuracy is changed to relative frequency deviation;

---Expanded the time interval measurement range;

---Added calibration items for built-in time base and DC bias voltage;

---Detailed technical indicators of measurement characteristics.

The release status of previous versions of this specification.

---JJG723-2008;

---JJG723-1991;

---JJG803-1993.

Time interval generator calibration specification

1 Scope

This specification applies to the calibration of the generator with an output range of 1ns~10000s time interval.

2 Reference documents the following documents are cited in this specification.

Quartz crystal oscillator in JJG180 electronic measuring instrument JJG181 Quartz crystal frequency standard JJG292 Rubidium Atomic Frequency Standard JJG2007 Time and Frequency Measuring Instruments JJF 1180 Time-frequency measurement terms and definitions for dated reference documents, only the dated version applies to this specification; for all undated references the latest version (including all amendments) is applicable to this specification.

3 overview

The time interval generator is also called a time synthesizer, which is based on a quartz crystal oscillator or rubidium atomic frequency standard.

Clock, using digital synthesis technology to generate various types of time that can be set to pulse period, delay time, pulse width, etc.

A measuring instrument for interval signals. The time interval generator is widely used in various time control in the fields of navigation, communication, etc.

The system can be used as a standard source when verifying and calibrating time measuring instruments.

The output mode of the time interval generator includes the pulse period and pulse width of the single output pulse train, and the two output pulses.

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The time interval between flush trains, etc. The time interval generator can have multiple output channels, and the output pulse polarity can be positive or negative.

Logic forward pulse and reverse pulse. Its principle block diagram is shown as in Fig. 1.

Figure 1 Principle of time interval generator

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