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NATIONAL METROLOGY TECHNICAL SPECIFICATION OF THE

PEOPLE'S REPUBLIC OF CHINA

JJF 1924-2021

Calibration Specification for Digital Television Test Signal Transmitters

数字电视测试信号发射机 校准规范

(English Translation)

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Introduction

This specification is based on JJF 1071-2010 "Rules for Compilation of National Metrology Calibration Specifications" and JJF 1059.1-2012 "Measurement Uncertainty Evaluation and Representation" was compiled.

This specification refers to GB/T 26681-2011 "Technical Requirements and Measurements

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for Terrestrial Digital Television Standard Test Transmitters" Methods", GB 20600-2006 "Digital TV Terrestrial Broadcasting Transmission System Frame Structure, Channel Coding and Modulation", GY/T 170-2001 "Cable Digital TV Broadcasting Channel Coding and Modulation Specification", GB/T 17700-1999 "Guardian" Star Digital TV Broadcasting Channel Coding and Modulation Standard" and ETSITR101290V1.2.1 (2001-05) "Digital Video the currently valid version of the Guidelines for Measurement of Radio Frequency Broadcasting Systems (DVB).

This specification is published for the first time.

Specification for calibration of digital television test signal transmitters

1 Scope

This specification applies to cable, terrestrial and satellite digital TV test signal transmitters (also known as digital TV signal generators).

device, digital TV modulator, digital TV channel generator, etc.) calibration, other standard digital TV test signal transmission the calibration of the transmitter can be performed by reference.

2 Reference documents this specification references the following documents.

GB/T 17700-1999 Channel coding and modulation standard for satellite digital television broadcasting GB 20600-2006 Frame structure, channel coding and modulation of digital television terrestrial broadcasting transmission system GB/T 26681-2011 Technical requirements and measurement methods for terrestrial digital TV standard test transmitters GY/T 170-2001 Channel coding and modulation specification for digital cable television broadcasting for dated references, only the dated version applies to this specification; for undated references the latest version (including all amendments) applies to this specification.

3 Terminology and units of measurement

3.1 Modulation error ratio the sum of squares of the ideal sign vector sizes divided by the sum of squares of the sign error vector sizes. Modulation error ratio is the description the comprehensive parameter of digital modulation signal quality, the symbol is MER, and it is expressed in dB.

MER=10xlg

(I2j Q2j)

(deltaI2j deltaQ2j)

where.

Ij and Qj---the size of the I and Q components of the ideal symbol vector;

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deltaIj and deltaQj---the size of the I component and the Q component of the symbol error vector;

N---The total number of sampling data in one measurement.

3.2 Error vector magnitude the sum of the squares of the vector errors is divided by the size of the outermost position vector of the constellation, the symbol is EVM, and it is expressed in %.

EVM=

Nsum

(deltaI2j deltaQ2j)

S2max

x100% (2)

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