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JJF

**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

JJF 1885-2020

**Calibration Specification for RF and Microwave Power Meters
(English Translation)**

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Introduction

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

This specification is released for the first time:

Radio frequency and microwave power meter calibration specifications

1 Scope

This specification is applicable to various types with a frequency range of 9kHz~50GHz and a power range of -70dBm~20dBm Types of radio frequency and microwave power meter calibration, other frequency range radio frequency and microwave power meter calibration can be used as a reference:

2 overview

The RF and microwave power meter (hereinafter referred to as the power meter) consists of the conversion part and Corresponding measurement and indicator components are used to convert radio frequency or microwave signals into DC or low frequency signals to be measured and the principle of indication completes the measurement of radio frequency and microwave power:

3 Metrological characteristics

3.1 Reference source power Output power: 1mW (50MHz);

Maximum allowable error of output power: $\pm 0.5\%$:

3.2 Calibration factor (K) Frequency range: 9kHz~50GHz;

Calibration factor measurement uncertainty: 0.5%~5% ($k=2$):

3.3 Linearity

Calibration frequency: 50MHz;

Power range: -20dBm~ 10dBm;

Linearity measurement uncertainty: 0.04dB~0.1dB ($k=2$):

3.4 Voltage standing wave ratio Frequency range: 9kHz~50GHz;

Measurement uncertainty: 0.02~0.03 ($k=2$):

Note: The above technical indicators are not for eligibility judgment, only for reference:

4 Calibration conditions

4.1 Environmental conditions Ambient temperature: $(23\pm 5)^{\circ}\text{C}$, the temperature fluctuation

does not exceed 1°C during calibration;

Relative humidity: not more than 80%;

Power requirements: voltage (220 ± 11) V, frequency (50 ± 1) Hz;

Other: There is no mechanical vibration and electromagnetic interference that affect the normal operation of the calibration system:

4.2 Equipment for calibration

4.2.1 Signal generator