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

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

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Introduction

This specification is based on JJF 1071-2010 "National Metrology Calibration Specification Writing Rules", related terms and measurements Uncertainty assessment follows JJF 1001-2011 "General Terms and Definitions" and JJF 1059.1-2012 Uncertainty Evaluation and Representation.

This specification is the first release.

RF and Microwave Power Amplifier Calibration Specifications

1 Scope

This specification applies to RF and frequency range 10 kHz to 40 GHz and maximum output power less than 65.5 dBm.

Calibration of a microwave power amplifier (hereinafter referred to as a power amplifier).

2 Terms and definitions

2.1 Maximum output power maximaloutputpower the maximum power output by the power amplifier in the linear amplification region.

2.2 gain flatness Used to describe the gain fluctuation variation of a power amplifier within a specified operating frequency band, usually using a power amplifier the absolute value of the maximum or minimum gain versus the average gain deviation is indicated by a positive or negative sign.

2.3 1dB compression point output power poweroutputat1dBcompression the power amplifier enters the nonlinear region, and its gain will decrease as the input power increases, when the gain of a certain frequency when 1 dB is dropped, the output power at this time is the 1 dB compression point output power at that frequency point.

2.4 third-order intermodulation when the power amplifier adds two signals that do not generate gain compression and have equal output powers at frequencies f_1 and f_2 at the time, a third-order intermodulation signal with frequencies of $2f_1-f_2$ and $2f_2-f_1$ will appear. Fundamental signal output power characteristic delay the intersection of the long line and the third-order intermodulation characteristic extension line is called the third-order intermodulation.

3 Overview

Power amplifiers are divided into solid-state amplifiers and traveling-wave tube amplifiers. Power amplifiers are generally driven, boosted, and finalized.

Power amplifier and output filter, automatic power control, output protection circuit and other units.

4 Measurement characteristics

4.1 Frequency range

10kHz~40GHz.

4.2 Rated output power Less than 65.5dBm.

4.3 Maximum output power Less than 65.5dBm.

4.4 gain

0dB~80dB.

4.5 gain flatness