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**Calibration Specification for Vector Network Analyzers
(English Translation)**

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Introduction

This specification based JJF 1071-2010 "National Calibration Specifications writing rules" and JJF 1059.1-2012 "Evaluation and Expression of Uncertainty in Measurement" establishment.

This specification mainly for the frequency range 9kHz ~ 50GHz heterodyne vector network analyzer calibration method Has been stipulated, calibration include. Internal frequency signal source, the internal power source, the trace noise, the background noise Sound, crosstalk, dynamic modulus accuracy calibration characteristic pieces, scattering parameter measurement accuracy and so on. Given in the Appendix the trace noise, uncertainty of measurement of the background noise, the dynamic modulus accuracy calibration and other major projects evaluation instance.

This specification is the first release.

Vector network analyzer calibration specification

1 Scope

This instruction applies to heterodyne vector network analyzer and an extension module extends the frequency range of the measurement or test terminal Port number heterodyne vector network analyzer calibration.

2. References

This specification references the following documents.

IEEEStandard287 precision coaxial connector standard (DC ~ 110GHz)
[StandardforPrecision CoaxialConnectors (DCto110GHz)] for dated references, only the edition used in the present specification; undated reference documents Member, the latest edition (including any amendments) applies to this specification.

3 terminology and units of measurement 3.1 heterodyne network analyzer Using heterodyne or network analyzer superheterodyne receiver.

3.2 Test port Port for connection to the network under test, the test signal output and input of the vector network analyzer panel.

3.3 Test port crosstalk between testportcrosstalk Used to describe the path does not pass through the test port connection between the test signal from one test to another port leak the extent of the test port, commonly used in decibels (dB), referred to as crosstalk.

3.4 Test port noise floor Used to describe the equivalent input noise power network analyzer port, common units dBm, referred to as the Noise floor.

3.5 the trace noise Used to describe the test signal input test port, affecting the background noise can be ignored, the scattering parameters shown Value (modulus and phase angle) fluctuation over time.

Note: the trace module includes a noise value that the trace noise and phase noise trace sweep, sweep trace noise common mode value is expressed in decibels (dB), phase the trace noise common in degrees (°).

3.6 Dynamic accuracy when used to describe a test port network analyzer to measure the incident power, the measurement accuracy is dependent on the measured signal (frequency Rate, power) degree, commonly used in decibels (dB).

3.7 Calibration member calibrationkit for vector network analyzer system calibration error from a set of standards, a self-calibration method is different from the standard group as also will be different.

3.8 Test pieces verificationkit