



# TECHNICAL REPORT



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**Transmitting and receiving equipment for radiocommunication – Radio spectrum measurement method – 300-GHz spectrum measurement equipment**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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## INTRODUCTION

This document describes a high-dynamic-range spectrum measurement system to measure spectra in the frequency range 140 GHz to 300 GHz. Although millimeter-wave (mmWave) technology has high potential for both industries and users, there are no developed techniques for evaluating spectra suppressing the unwanted response generated in the measurement system. In addition, the commercialized spectrum analyser for this frequency band cannot accurately measure low power input signals due to the insufficient dynamic range while high power signals are input to the spectrum analyser simultaneously. This document describes the high-dynamic-range spectrum measurement system with low unwanted response for measuring spectra in the frequency range 140 GHz to 300 GHz, and proposes an mmWave pre-selector to suppress the unwanted response generated in the measurement system.

# **TRANSMITTING AND RECEIVING EQUIPMENT FOR RADIOCOMMUNICATION – RADIO SPECTRUM MEASUREMENT METHOD – 300-GHz SPECTRUM MEASUREMENT EQUIPMENT**

## **1 Scope**

This document specifies spectrum measurement methods in the frequency range 140 GHz to 300 GHz. This document also provides background information, describes system configurations, key mmWave pre-selector technology, as well as some examples of the spurious measurement of antennas under test (AUTs) over the air.

## **2 Normative references**

There are no normative references in this document.