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IEEE Standard Method for Measuring Transmission Performance of Speakerphones

Sponsor

Transmission, Access, and Optical Systems Committee
of the
IEEE Communications Society

Approved 17 June 2010

IEEE-SA Standards Board

Abstract: This standard provides techniques for objective measurement of electroacoustic and voice-switching characteristics of speakerphones that connect directly or indirectly to an analog or digital telephone network. Due to the various characteristics of speakerphones and the environments in which they operate, not all of the test procedures in this standard are applicable to all speakerphones. Application of the test procedures to atypical speakerphones should be determined on an individual basis.
Keywords: full duplex, half duplex, handsfree, speakerphone, voice switching

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Introduction

This introduction is not part of IEEE Std 1329-2010, IEEE Standard Method for Measuring Transmission Performance of Speakerphones.

This standard has been developed in response to a widely expressed need by the telecommunications industry for a standard, comprehensive method for testing the transmission performance of speakerphone telephone sets. This standard is generally in agreement with the International Telecommunication Union—Telecommunication Standardization Sector (ITU-T) test arrangements and calibration procedures.

The IEEE will maintain this standard current with the state of the technology. Comments on this standard and suggestions for the additional material that should be included are invited. Comments should be addressed to the Secretary, IEEE Standards Board, The Institute of Electrical and Electronics Engineers, Inc., 445 Hoes Lane, Piscataway, NJ 08854.

This standard began in 1992 and was prepared by the Subcommittee on Telephone Instrument Testing of the Transmission, Access, and Optical Systems Committee of the IEEE Communications Society (formerly the IEEE Communications Technology Group). It was originally published in 1999 and has been updated in this 2010 edition to reflect current telecommunications technology.

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IEEE Standard Method for Measuring Transmission Performance of Speakerphones

1. Overview

1.1 General

Objective or subjective methods can be used to measure speakerphone transmission performance. This standard discusses objective procedures utilizing a sound source, laboratory microphone, and test instruments to characterize transmission performance. Subjective methods are particularly applicable for rating overall communication connections involving the real voice and real ear of human subjects. Speakerphones can be evaluated by purely objective methods provided the methods agree with the desirable performance characteristics of subjective testing.

It is a complex problem to obtain accurate and repeatable speakerphone test results. To meet these measurement goals, the reader should be aware of the nonlinear and time-variant characteristics of speakerphones. This standard describes test signals and corresponding analysis methods that can be chosen to place the speakerphone is in a well-defined operating state during testing.

Execution of this standard provides a means of determining the operational characteristics of a speakerphone in conditions encountered during normal operation.

1.2 Scope

This standard provides techniques for objective measurement of electroacoustic and voice-switching characteristics of speakerphones that connect directly or indirectly to an analog or digital telephone network. Due to the various characteristics of speakerphones and the environments in which they operate,