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AMENDMENT 1
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INTERNATIONAL SPECIAL COMMITTEE ON RADIO INTERFERENCE

Amendment 1

Specification for radio disturbance and immunity measuring apparatus and methods –

Part 3:
CISPR technical reports

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FOREWORD

This amendment has been prepared by CISPR subcommittee A: Radio interference measurements and statistical methods.

The text of this amendment is based on the following documents:

DTR	Report on voting
CISPR/A/572/DTR	CISPR/A/586/RVC

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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Add, on page 186, after the existing subclause 4.6, the following new subclause:

4.7 Correlation between amplitude probability distribution (APD) characteristics of disturbance and performance of digital communication systems

4.7.1 Introduction

The relationship between the degradation in quality of digital communication systems and APD of disturbance is shown in the following experimental results. Actual microwave ovens (MWO), such as the transformer and the inverter types, and a noise simulator, were used as a noise source in the following experiment. Bit Error Rate without error correction was basically used as a parameter of communication system performance (e.g., W-CDMA and PHS). Throughput is used if error correction could not be removed (e.g., W-LAN, Bluetooth and PHS).

Quantitative correlation between noise parameters and system performance is shown in 4.7.6 and 4.7.7 by using measured and simulated results.

These results show that APD measurement of disturbance is suitable for evaluating its interference potential on digital communication systems. Therefore APD measurement may be applicable to the compliance test of some products or product families, such as microwave ovens.

4.7.2 Influence on a wireless LAN system

The set-up for measuring communication quality degradation is shown in Figure 4.7.1, and measurement conditions are shown in Table 4.7.1. Throughput was chosen as a measure for communication quality evaluation. It was calculated from the time taken to transmit and time to receive data of a fixed size.

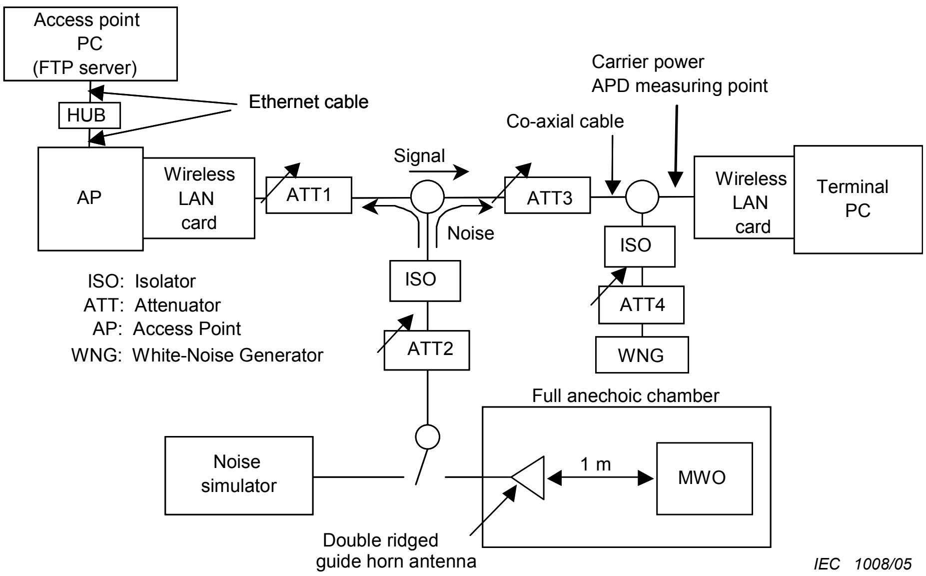

Figure 4.7.1 – Set-up for measuring communication quality degradation of a wireless LAN

Table 4.7.1 – Conditions for measuring communication quality degradation

Wireless LAN	Frequency (channel)	2 462 MHz (11ch)
	Transmission data	20 Mbyte
	Protocol	FTP (GET command from terminal PC)
	Transmission mode	Packet transmission
Others	Noise power density N_0 (dBm/Hz)	–154 dBm/Hz (set by ATT4)

The APDs of disturbance are shown in Figure 4.7.2. The horizontal axis shows the level of radiated noise normalized by N_0, which has been approximated as the noise level from the white noise generator. The main frequency for measuring APD was 2462 MHz. The average and root-mean-square (RMS) values of the noise level normalized by N_0 derived from APD of the MWO noise and noise simulator noise are shown in Table 4.7.2.

APD of the noise simulator at *ATT2* = 0 dB was in good agreement with APD of the inverter type MWO at *ATT2* = 10 dB.