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Transmitting equipment for radiocommunication — Radio-over-fibre technologies for electromagnetic-field measurement

Part 2: Radio-over-fibre technologies for electric-field sensing

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National foreword

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TECHNICAL REPORT

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Transmitting equipment for radiocommunication – Radio-over-fibre technologies for electromagnetic-field measurement – Part 2: Radio-over-fibre technologies for electric-field sensing

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Part 2: Radio-over-fibre technologies for electric-field sensing

FOREWORD

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IEC TR 63099-2, which is a Technical Report, has been prepared by IEC technical committee 103: Transmitting equipment for radiocommunication.

The text of this Technical Report is based on the following documents:

Draft TR	Report on voting
103/184/DTR	103/186A/RVDTR

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

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 63099 series, published under the general title *Transmitting equipment for radiocommunication – Radio-over-fibre technologies for electromagnetic-field measurement*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

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- withdrawn,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

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

This document provides information on the current and latest applications for electric-field sensing using radio-over-fibre technology. Electric-field measurement systems are covered, which are practically in use or will be used soon. It will be beneficial to system developers and system users in the fields of electric-field measurement. As a Technical Report, this document contains no requirements and is informative only.

TRANSMITTING EQUIPMENT FOR RADIOCOMMUNICATION – RADIO-OVER-FIBRE TECHNOLOGIES FOR ELECTROMAGNETIC-FIELD MEASUREMENT –

Part 2: Radio-over-fibre technologies for electric-field sensing

1 Scope

The purpose of this part of IEC 63099 is to provide information about the current and latest applications for electric-field measurement that use radio-over-fibre technologies. System configurations, specifications, and measurement examples of each electric-field measurement system are included. The theoretical background of electric-field measurement and calibration method of electric-field sensors are beyond the scope of this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEEE Std. 145-2013, *IEEE Standard for Definitions of Terms for Antennas*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEEE Std. 145-2013 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1.1
O/E converter
optical to electrical converter
converter which directly converts optical signals into electrical signal

Note 1 to entry: A photo-diode is generally used as an O/E converter device

3.1.2
isotropy
uniform sensitivity for all spherical direction

Note 1 to entry: Sometimes it is misunderstood as equivalence of each axis sensor of 3-axis.

3.1.3
TEM-Cell
transverse electromagnetic field cell waveguide which can generate a certain level of uniform electric-fields in the cell