PD IEC/TR 63098-1:2017

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Transmitting equipment for radiocommunication — Radio-over-fibre technologies and their performance standard

Part 1: System applications of radio over fibre technology

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National foreword

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CONTENTS

FOREWORD 4
INTRODUCTION 6
1 Scope 7
2 Normative references 7
3 Terms, definitions and abbreviated terms 7
3.1 Terms and definitions 7
3.2 Abbreviated terms 7
4 Advantages and disadvantages of RoF 8
5 Practical applications 9
5.1 List of applications 9
5.2 Mobile communication system 9
5.2.1 General 9
5.2.2 Features 10
5.2.3 System configuration 10
5.2.4 Specifications 10
5.3 Relay station for digital terrestrial TV 11
5.3.1 General 11
5.3.2 Features 11
5.3.3 System configuration 11
5.3.4 Specifications 12
5.4 Airport multilateration system 12
5.4.1 General 12
5.4.2 Features 13
5.4.3 System configuration 13
5.4.4 Specifications 13
6 Examples of standardization activities 14
Annex A (informative) Radio-over-fibre system in accordance with spectral emission standards 15
A.1 General 15
A.2 Reference model 15
A.3 Equipment 16
A.3.1 General 16
A.3.2 Down link transmission signal 16
A.3.3 Physical specifications 18
A.3.4 Example of EO and OE performance 18
A.4 Measurement methods 19
A.4.1 Spectrum mask and unwanted emission 19
A.4.2 Examples of measurement items 19
Bibliography 21

Figure 1 – Usage Image of each Multi Drop Optical Feeder (MoF) [1] 10
Figure 2 – System configuration [2] 12
Figure 3 – System configuration of the advanced MLAT "OCTPASS" 13
Figure A.1 – RoF system reference model 16
Figure A.2 – Spectrum mask 17

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Full document details: PD IEC/TR 63098-1:2017

Table 1 – Application examples 9
Table 2 – Specification of RoF links 11
Table 3 – Specifications of an RoF system 12
Table 4 – Specifications of an RoF system for multilateration 14
Table A.1 – Transmission spectrum break points 17
Table A.2 – Unwanted emission specifications for DTTB 18
Table A.3 – Example of EO and OE performance 19
Table A.4 – Example of measurement items for factory and on-site inspections 20

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TRANSMITTING EQUIPMENT FOR RADIOCOMMUNICATION – RADIO-OVER-FIBRE TECHNOLOGIES AND THEIR PERFORMANCE STANDARD –

Part 1: System applications of radio over fibre technology

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Enquiry draft	Report on voting
103/153/DTR	103/168/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.

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INTRODUCTION

Using radio-over-fibre technology, RF modulated optical carriers and signals can be transmitted in optical fibre with very low loss. Fundamentally, radio-over-fibre (RoF) is an analogue transmission system that allows radio frequency signals to be transmitted and processed without being digitized. Remote antenna systems including distributed antenna system (DAS) which use RoF technology in terrestrial broadcasting and mobile communications have also become established infrastructures.

In terrestrial broadcasting, the conventional microwave links for studio-transmitter links (STLs), transmitter-studio links (TSLs), transmitter-transmitter links (TTLs) and field pickup units (FPUs) have been replaced by RoF systems, particularly in Japan.

RoF technology is a promising technology for broadband access networks combined with the mobility and the flexibility of wireless access. An advantage of RoF technology is multiplexing of RF signals. Multiple RF signals can be converged on the physical layer and they are transmitted to the remote site transparently. RoF technology can also be used for multiplexed transmission that supports CATV (cable television) trunk line systems, cellular phone systems, etc. for blind spots, such as inside buildings, underground areas and subways. RoF systems are also used in digital signage systems and rapid and agile deployment of broadcasting and communication services.

This document provides information on the current and latest applications of radio-over-fibre technology, which are already implemented or will be in the near future. This document will also be beneficial to system developers and system users in the fields of mobile communications and optical fibre technologies.

An example of the technical specification of a radio over fibre (RoF) link in accordance with the spectral emission standard for digital terrestrial television broadcasting in Japan is given in Annex A.

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