



INTERNATIONAL STANDARD



**Transmitting and receiving equipment for radiocommunication – Radio-over-fibre technologies and their performance standard –
Part 2: Radio-over-fibre-based fronthaul network for railway communication systems**

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

**Part 2: Radio-over-fibre-based fronthaul network
for railway communication systems**

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The text of this International Standard is based on the following documents:

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC 63098 series, published under the general title *Transmitting and receiving equipment for radiocommunication – Radio-over-fibre technologies and their performance standard*, can be found on the IEC website.

Future documents in this series will carry the new general title as cited above. Titles of existing documents in this series will be updated at the time of the next edition.

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INTRODUCTION

A high-speed train communication network comprises two parts: a back-end network and wireless access system to deliver data to train cars. In this back-end network, optical fiber communication-based networks are generally utilized to reduce the complexity of the radio access units set along the railway track, which delivers the signal wirelessly to the train car, wireless signals are generated and processed at a central office, and then are transported via an optical fiber network into the radio access units. A radio-over-fiber fronthaul network is configured to transport the wireless signal, which is applicable between a node base station and radio access units set at a trackside. The radio-over-fiber-based fronthaul link connects the node base station to the trackside radio access units and carries millimeter-wave subcarrier or intermediate frequency components to transmit high-capacity signals. This document provides the required performance with reliability and quality assurance of radio-over-fiber-based fronthaul networks for railway communication networks between trains and tracksides, as well as a design guide for network configuration.

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

Part 2: Radio-over-fibre-based fronthaul network for railway communication systems

1 Scope

This part of IEC 60598 specifies a radio-over-fiber-based fronthaul network for railway communication systems between trains and tracksides and their transmitters and receivers.

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.

IEC 60950-1, *Information technology equipment – Safety – Part 1: General requirements*