

BS ISO 21216:2011



BSI Standards Publication

Intelligent transport systems — Wireless communications — CALM using millimetre communications — Air interface

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National foreword

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A list of organizations represented on this committee can be obtained on request to its secretary.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 21216 was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

Introduction

This International Standard is part of a family of standards for communications access for land mobiles (CALM) which determines a common architecture, network protocols and air interface definitions for wireless communications using a range of communication bearers, such as Cellular 2nd Generation, Cellular 3rd Generation, microwaves, millimetre waves and Infra-red light. Other air interfaces may be added at a later date. These air interfaces are designed to provide parameters and protocols for broadcast, point-point, vehicle-to-vehicle, and vehicle-point communications for intelligent transport systems (ITS) applications.

This International Standard provides specifications for the PHY part of a communications interface for systems operating within the millimeter frequency range of 57 to 66 GHz. This communications interface (referred to as CALM MM) is designed to provide up to medium range, medium-to-high-speed wireless communications links in the ITS sector. Such communication links are required for quasi-continuous, brief or prolonged communications between

- vehicles and the roadside communication infrastructure, and
- vehicles.

Vehicles may be moving or stationary.

Wherever practicable, this International Standard has been developed by reference to suitable existant standards, adopted by selection. Required regional variations are provided for.

ITS applications can be enhanced or are enabled by the CALM architecture and media include car-to-car and point-to-multipoint safety messaging, collision avoidance, the update of roadside telemetry and messaging, probe data collection, general internet access, image and video transfer, infotainment, traffic management, monitoring and enforcement in mobile situations, route guidance, maintenance management, and “yellow pages” services.

The millimetric frequency band is suitable for applications which require the transfer of a large quantity of data, or of combinations of applications which together require a high data transfer because they need to be able to coexist.

This International Standard recognizes that frequency allocations in the millimetric range around 60 GHz differ in different parts of the world. In Europe (ITU Region 1), the band 63 to 64 GHz has been designated for ITS applications, while in some countries in ITU Regions 2 and 3 ITS applications may take place within the wider range of 57 to 66 GHz, in which a variety of generic application types is allowed. The emission limits vary among regions or countries. A frequency band specifically designated for ITS applications is not required in order to implement this International Standard.

Because of these variations, this International Standard describes the physical layer parameters which need to be standardized to characterize the air interface. This description will enable equipment to be designed which has functional interoperability in the same country or region, but which will have detailed parameters limited in accordance with the appropriate national standards. It also describes those parameters characterizing the operation of the radio which are needed for interfacing to the CALM architecture, in accordance with ISO 21218.

