

Installation Standards for Visible Light Communication Equipment



AI Overview

VLC equipment installation should comply with ITU-T G.9991 and IEEE 802.15.7/802.11bb standards, ensuring proper LED placement, optical alignment, and integration with lighting infrastructure for reliable high-speed data transmission.

Key Standards

- ITU-T G.9991: Defines system architecture, physical (PHY) layer, and data link layer (DLL) for indoor LiFi transceivers and access points integrated into LED or infrared lamps, providing a framework for high-speed indoor VLC deployment .
- IEEE 802.11bb: Specifies MAC and PHY layers for wireless connectivity in fixed, portable, and mobile stations, enabling conversion of existing WiFi hardware into VLC-compatible devices with minimal additional circuitry .
- IEEE 802.15.7: Focuses on high-data-rate VLC up to 96 Mb/s, including dimming-adaptable mechanisms for flicker-free operation, which is critical for maintaining both illumination and communication quality .
- IEEE 802.15.13: Defines optical wireless personal area network (OWPAN) protocols, supporting multi-Gbit/s data rates and specifying MAC and PHY layers for low-power, high-throughput applications .

Installation Considerations

- LED Placement and Orientation: LEDs should be positioned to maximize line-of-sight coverage while minimizing shadowing and interference. Micro-LEDs or laser diodes may be used for higher modulation bandwidth and longer-range communication .

Article Content

Visible light communication technologies: A tutorial and survey from ...

The integration of low-cost printable organic light-emitting diodes (OLEDs) as eco-friendly emitters in visible light

A Comprehensive Survey of Visible Light Communication ...

Visible light communication (VLC) is seen as a potential candidate for next generation communication networks. In

Visible Light Communication for Cooperative ITS

Visible Light Communication (VLC) is the technique adopting electromagnetic frequencies in the visible spectrum for

Advancements in LED-based indoor visible light communication: A two ...

This paper concisely surveys LED-based indoor visible light communication (VLC), emphasizing the growth and

Visible Light Communication: Concepts,

In this work, we present a comprehensive survey of Visible Light Communication. In order to accomplish that, we analyze the main

Visible light for broadband communications

Many improvements were achieved on these systems until the 1950s, however most of the materials used for detection have higher

Visible light communication technologies: A tutorial and survey from ...

Following this, the Visible Light Communication Consortium (VLCC) introduced new specifications in 2008, but it was in

Visible Light Communication

Drawing on the expertise of leading researchers from across the world, this concise book sets out the theoretical principles of VLC,

Visible Light Communication: An Emerging Technology

This chapter provides an overview of the fundamentals of visible light communication (VLC) by thoroughly exploring its

Visible Light Communication System Technology Review: Devices

The performance of the VLC system is briefly discussed in this review article, as well as some of its prospective

Li-Fi and Other Visible Light Communications (VLC) Standards

The new standard for Li-Fi, IEEE 802.11bb, is designed to provide a global framework to deploy light-based devices

Visible Light Communications | Springer Nature Link

This book describes the methods and application of Visible Light Communication (VLC) and covers topics such as light sources,

Visible Light Communication: A System Perspective—Overview and

Visible light communication (VLC) is a new paradigm that could revolutionise the future of wireless communication. In

Visible light communication for vehicular networks: A tutorial

Abstract The advent of the fifth-generation technology promises to enable more vertical applications and emerging

Visible Light Communication and its Applications

I. INTRODUCTION The radio frequencies occurs in the range of 30HZ to 300GZ. But only a small part of this spectrum is used for

Visible Light Communication Technologies: A Review of

Wireless communication represents the basis for the next generation of vehicle safety systems, whereas visible light

A Comprehensive Study on the Advances and Challenges in Visible Light ...

Visible Light Communication (VLC) is a burgeoning technology leveraging Light-Emitting Diodes (LEDs) to transmit data through

(PDF) Visible Light Communication: A System Perspective

To address the question in the subtitle of this article, we start by discussing earlier mobile communication systems,

IEEE 802.15.7 Task Group

The IEEE 802.15.7 Visible Light Communication Task Group has completed a PHY and MAC standard for Visible Light

Visible Light Communication Technologies: A Review of IEEE

ABSTRACT Visible light communication (VLC) is a relatively new wireless communication technology that uses visible

A Review of Advanced Transceiver Technologies in Visible Light

Visible Light Communication (VLC) is an emerging technology that utilizes light-emitting diodes (LEDs) for both indoor

Visible Light Communications | Springer Nature Link

This book describes the methods and application of Visible Light Communication (VLC) in an easily understood format.

AN OVERVIEW OF VISIBLE LIGHT COMMUNICATION SYSTEMS

ABSTRACT Visible Light Communication (VLC) has gained great interest in the last decade due to the rapid developments in Light

Visible Light Communication: Concepts, Applications and Challenges

During the last decade, the exponential growth of mobile devices and wireless services created a huge demand for

Design and Implementation of Optical Fiber-based Visible Light ...

Thus, an optical fiber-based VLC structure is proposed to unlock traditional network cable transmission for the first time. Specifically,

Overview of Visible Light Communication

Visible light communication (VLC) is a novel and attractive subject not only involving old basic optical theory including generation,

NOMA for Visible Light Communications: Recent Advances and

Visible light communications (VLC) is a strong complement to radio frequency (RF) systems within 6G. The latest ITU

Overview of Visible Light Communication | Springer Nature Link

This chapter describes the physical nature and characteristics of visible light (VL) waves as the carrier for visible light

Visible Light Communications

This book describes the methods and application of Visible Light Communication (VLC) and covers topics such as light

Visible Light Communication (VLC) Basics

Abstract Visible light communication (VLC) has emerged as a transformative technology that leverages light as a

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As a carrier for wireless communications, radio, infrared radiation, and visible light (VL) are complementary transmission media, and

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