

# 广播与电视技术

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《广播与电视技术》是由国家新闻出版广电总局主管，国家新闻出版广电总局广播电视规划院主办，信息研究所编辑出版的国家级技术期刊；是发布广播电视科技政策，反映事业建设成就，介绍高新技术，交流工作经验，传播各种信息的重要媒体。本刊主要面向各级广播电视行业主管部门、各级广播电台、电视台、网络公司、发射台、微波站、卫星站、节目制作单位及电教系统，同时对企业、工矿、学校、部队等具有公共广播电视设施的管理人员、技术人员也有参考价值。

为繁荣学术交流，本刊已加入《中国学术期刊网络出版总库》、“万方数据”和“维普中文科技期刊数据库”，有权选取部分论文在本刊关联平台（如广电猎酷网 www.lieku.tv、“广电猎酷”微信公众号等）发布，作者著作权使用费已随论文稿酬一次性给付。本刊充分尊重作者的原创成果并合理保护作者享有的权利，如作者不同意本刊之外其他形式的发布，请在来稿中声明，本刊将作适当处理。本刊及主办单位对本刊已发布作品的内容和观点不持有任何立场、不做出任何承诺或保证、不承担任何责任。

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## [25] 地面数字电视单频网优化设计及监测分析探讨

为保证地面数字电视单频网整体良好运行，开展实时、全面的覆盖效果监测非常必要。本文结合中央广播电视节目无线数字化覆盖工程的建设实施情况，在借鉴传统广播电视运行监测方法的基础上，对地面数字电视单频网的覆盖监测选点和数据分析处理等方面进行了探讨，提出了建议，可供参考。

## [46] 人工智能在广电“智慧家庭”平台的应用探讨

人工智能（AI）在广电“智慧家庭”领域有着广阔的应用前景。本文结合“中国广电宽带电视”平台建设现状，阐述了AI在广电“智慧家庭”平台中应用的相关思考，值得参考借鉴。

## [52] 广电媒体的大数据应用研究

随着大数据技术的发展成熟和应用推广，大数据现已成为推动广电媒体转型的一支重要力量，然而，业界对大数据的认识并未统一，到底什么是大数据？广电媒体的大数据包含哪些内容？广电媒体该如何利用大数据？本文结合深圳广电集团的创新实践，从理论研究和应用分析两个层面对上述问题作出了探索性回答，有利于进一步拓展业界同行的思路，更好地迎接大数据给广电媒体发展带来的机遇与挑战。

## [64] SDI over IP 实时制作系统视频净切换方案研究

在整个电视制播中心全IP化进程中，首先进行的是传输环节的IP化，即在发端和收端仍可继续使用带有SDI输出输入接口的原设备，原来承载切换视频功能的SDI切换矩阵将被以太网交换机代替。这种独特的网络环境和应用要求，给网络设计和视频切换方案提出了更高的要求。本文对当前提出的接收端切换、交换机切换、源端切换三大类视频切换方案进行了详细分析对比，可为电视台制播系统IP化网络工程设计提供参考。

## [86] 基于广电有线网络和DTMB的节目播出方案研究与实践

随着广电集客业务的发展，广电有线网络已在酒店、学校、部队、企业等行业和单位得到广泛的应用，多数业务场景都对视频质量提出了较高的要求，本文提出的技术方案经过项目实践检验，可以在某种程度上减少机顶盒设备，简化系统构成，提升系统稳定性，具有一定的借鉴推广价值。

## [110] 调频频段数字音频广播智能组网实践

数字音频广播通常使用单频网进行大范围覆盖。本文提出智能组网的设想，可以在多频网情况下，通过公共频点与业务频点相结合的方式实现数字音频广播大区域连续覆盖。文中介绍了该智能组网系统的设计思路、总体架构、业务平台、传输系统，以及系统的测试优化。目前湖北武汉和黄石已开展调频频段数字音频广播智能组网实践，对中央覆盖工程等全国性的数字音频广播建设具有明显的借鉴意义。

## [143] 广播电视应用软件网络数据交互分析方法研究

当前应用软件的信息技术规范研究在国家层面主要是以移动应用软件为主要的研究对象。与移动互联网的应用软件相比，广播电视应用软件对其稳定性、安全的技术要求更高，应及早提出相关的技术要求和测试评价方法。本文结合广播电视应用软件技术要求和测试方法的研究情况，提出一种广播电视应用软件网络交互分析系统的设计方法，希望为广播电视应用软件测试评价方法提供支撑。



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## [ 25 ] Optimization Design and Monitoring Analysis of DTTB Single Frequency Network

In order to ensure a good operation of DTMB single frequency network, a comprehensive real-time monitoring of coverage effect is very necessary. Combined with the construction of digital wireless coverage project of central broadcasting programs, this paper applies the traditional radio and TV monitoring methods, and explores the monitoring location and data analysis of DTMB SFN coverage. Suggestions are made for reference.

## [ 46 ] Application of AI in CATV Smart Home Platform

Artificial intelligence (AI) has broad application prospect in "smart home". Based on the current construction of broadband cable TV platform in China, this paper expounds the related thinking of AI application in smart home based on CATV, which is worth reference.

## [ 52 ] Research on the Application of Big Data in Radio and TV Media Industry

With the development and application of big data technology, big data has become an important force to promote the transformation of radio and television media. However, the media industry has different understanding of big data. What is big data exactly? What is the big data of radio and television media? How could the media industry apply big data? Based on the innovative practice of Shenzhen Radio and TV Group, this paper explores those problems in aspects of theoretical research and application analysis, which is helpful to expand the colleagues' thoughts and to better meet the opportunities and challenges that big data brought to the radio and television media.

## [ 64 ] Video Switch Scheme in SDI over IP Live Production System

In the process of IP transformation in TV production and broadcasting center, the first step is the IP transformation of the transmission link. That is, the original device with SDI interface can still be used at the sender and the receiver, while the SDI switching matrix, which is originally used for video switching, is replaced by the Ethernet switch. This special network and application put forward higher requirements for network design and video switching scheme. This paper makes a detailed analysis and comparison of three kinds of video switching schemes, such as receiver switching, switch switching and source switching. It can provide reference for the IP transformation of network engineering in TV station broadcasting system.

## [ 86 ] TV Program Broadcasting Scheme Based on DTMB and Cable Network

With the development of group customer services, CATV network has been widely applied in hotels, schools, troops, enterprises and other industries. Most business scenarios have to reach a higher video quality. The technical scheme proposed in this paper has been proved in practical project to reduce the set-top box equipment, to simplify the system structure and to enhance the system stability, which has promotional value for reference.

## [ 110 ] Intelligent Networking Practice of FM Digital Audio Broadcasting

Digital audio broadcasting usually uses a single frequency network for large coverage. In this paper, the idea of intelligent networking is proposed. In the multi-frequency network, a digital audio broadcasting continuous coverage in large area is realized through the combination of common frequency points and business frequency points. This paper introduces the design idea, the overall framework, the business platform, the transmission system, the testing and optimization of the intelligent networking system. At present, Wuhan and Huangshi in Hubei province have carried out this intelligent networking of FM digital audio broadcasting. It has obvious reference for the construction of the central coverage project, which is a national digital audio broadcasting.

## [ 143 ] Research on Network Data Interaction Analysis of Radio and Television Application Software

At present, the information technology specification of application software at the country level is mainly researching on mobile application software. Compared with the mobile application software, radio and TV application software has higher requirements for stability and safety. The relevant technical requirements and evaluation methods should be put forward as early as possible. This paper proposes a design of network interactive analysis system for radio and TV application software, in combination with the technical requirements and the existing evaluation methods. It hopes to support the testing and evaluation of radio and TV application software.