

# 广播与电视技术

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Radio & TV Broadcast Engineering

全国百种重点期刊 专业核心科技期刊

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# 目次

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中国邮政  
微信订阅

2022年 | 第49卷 | 第12期

## 中国视听大数据(CVB)专栏·应用

12 成渝双城经济圈广播电视播出机构建设综合评价的实践与思考

沈峥, 杜珂, 成彪

## 热点·论点

### 广播电视智慧台站建设

15 省级广播电视智慧台站体系建设标准探讨

李晓飞

21 广播电视发射台站智慧化“数字孪生”平台建设实例

杨雷, 陈利鹏, 高瑞华

26 智慧中波安播监管系统设计与实践

金世新, 潘甘雨

## 广电5G

30 700MHz小型化5G天线在城市密集楼宇中的应用

谢强, 樊辉

## 网络视听

36 网络视听直播防盗流技术分析与应用

黄鹤

## 内容制播

41 IP传输无压缩视频技术研究和实践

刘勤山, 李小雨

45 IP音视频数据传输流质量评价方法研究

王红胜, 雷兴国, 曹凯

49 全媒体传播格局下的信息安全防御体系建设

王曼妮, 胡瀛斌

53 地市级城市慢直播平台的设计与实践

朱凯, 程犇

59 省级IP化广播电视节目集成平台技术方案设计与实践

冯秀燕

64 省级广播电视台高清播出系统搬迁改造设计案例分析

王伟

69 智能化网络化播控系统维护措施分析

郭建明

73 中型综合性演播室灯光系统的改造与灯位设计

牛志

## 传输覆盖

### 有线网络

77 基于多源异构数据模型的广电网络用户画像建设与应用

李诚



## 主管: 国家广播电视总局

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《广播与电视技术》是由国家广播电视总局主管,国家广播电视总局广播电视规划院主办,《广播与电视技术》编辑部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.cn、“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、不做任何承诺或保证、不承担任何责任。

# 目次

全国百种重点期刊 专业核心科技期刊  
投稿平台 [tougao.lieku.cn](http://tougao.lieku.cn)



中国邮政  
微信订阅

2022年 | 第49卷 | 第12期

81 水印相机在有线电视工程精细化管理中的应用

徐辉,李晟铭

85 有线电视前端故障感知存储系统的设计与实现

陈昊,邱承浚,魏智扬

90 基于机顶盒终端音频多模展现的设计与应用

顾洛怡

### 无线覆盖

96 地面数字电视单频道播出四套高清节目实践

邓楚雄,刘德祥,童龙文

99 5G大塔广播与5G核心网的互操作架构与方法

吕锐,邓纶晖,王非非

105 广电转播台站全业务信息化系统的设计与应用

潘秉波

109 基于LabVIEW与单片机的中波天线同轴开关倒换系统设计

何吉祥

113 电离层对短波广播传播的影响分析

海霞

### 安全播出与监测监管

116 数字音频信号直流检测方法研究与实现

朱祖来,孙建敏,董晓坡

121 基于计算机视觉和深度学习的安播辅助提示系统设计与应用

李一君

127 网络入侵检测在电视播出系统中的应用

季奕军

132 非法广播监测系统的设计与实现

覃少军,闭涛,蒙春婵

136 基于AoIP及AI技术的广播智慧总控监测系统

张宏祥

### 论述·点评

139 ITU-R SG6《未来广播电视展望》建议书解析

李雷雷

143 视听媒体微服务技术及架构状况分析

周建威,丁勋

广告索引 P151

2022年总目次 P152



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中国邮政  
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2022年 | 第49卷 | 第12期

### [15] 省级广播电视智慧台站体系建设标准探讨

在广播电视发射台站智慧化建设进程中,应建立系统性、标准化的建设模式,形成统一的要求、架构、功能,通过顶层设计提升系统的技术水平。本文分析了智慧台站的技术架构、功能需求、建设标准和部署方案,提出智慧台站建设应分级分类、统一互联、智慧化、云平台化,可供业内借鉴参考。

### [30] 700MHz小型化5G天线在城市密集楼宇中的应用

为满足5G网络在城市复杂建筑环境中的深度覆盖需求,必须完善和增加基站天线装置部署和安装密度。小型化700M 5G天线既能增加信号传输质量,又能在楼宇密集区域内的安装,是5G网络深度覆盖的有效手段。本文以北京市部署的移动小型化700M天线基站试点为例,介绍了其实施方案和覆盖效果,其成功部署为解决城市密集楼宇区域移动信号深度覆盖问题提供了可行的方案。

### [41] IP传输无压缩视频技术研究和实践

近年来,基于IP传输无压缩视频技术持续发展,SMPTE先后发布了ST 2022-6标准和ST 2110系列标准。论文比较了两个标准的差异,认为ST 2110系列标准相比ST 2022-6具有节省带宽、独立处理不同数据等更明显的优势,并给出了由SDI向IP演进的策略和建议,可资参考。

### [77] 基于多源异构数据模型的广电网络用户画像建设与应用

随着有线数字机顶盒的换代升级,已有相当数量的机顶盒终端支持双向传输功能,日益完善的终端数据为广电运营商开展精细化运营提供了技术可能,同时如何高效、安全地应用数据成为当下广电运营商需要探讨和解决的问题。江苏有线将广电数字用户画像功能广泛应用到企业微信、积分系统、IP机顶盒等各类平台、设备终端上,提高了营销效率、保证了服务质量,进而提升了用户满意度。该单位基于多源异构数据模型的广电网络用户画像建设实践值得业界同仁参考借鉴。

### [132] 非法广播监测系统的设计与实现

非法广播具有不易发现、不易定位、不易取证、不易查出的特点,严重干扰了无线电波秩序。本文设计开发了一套功能完善、体积小、功耗低、方便安装、价格便宜的有效发现非法广播的系统,可有效监测和打击非法广播,具有良好的经济效益和社会效益。



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# Contents

One of Hundred National Key Periodicals  
A Core Professional Sci-Tech Periodical  
tougao.lieku.cn

Dec 2022 No.12

## CVB Column • Application

12 Practice and Thinking on Comprehensive Evaluation of Radio and Television Stations in Chengdu and Chongqing Economic Circle *By Shen Zheng, Du Ke, Cheng Biao*

## Construction of Smart Radio and Television Station

15 Discussion on the Construction Standards of Provincial Smart Radio and Television Station *By Li Xiaofei*

21 Examples of the Intelligent "Digital Twin" Platform Construction of Radio and Television Transmitting Stations *By Yang Lei, Chen Lipeng, Gao Ruihua*

26 Design and Practice of Intelligent Medium-wave Safe Broadcasting Supervision System *By Jin Shixin, Pan Ganyu*

## 5G for Radio and Television

30 Application of 5G-700MHz Miniaturized Antennas in Urban Dense Buildings *By Xie Qiang, Fan Hui*

## Internet Audio & Video

36 Analysis and Application of Anti-theft Stream Technology in Network Audio-visual Live Broadcasting *By Huang He*

## Content Production & Broadcasting

41 Research and Practice of IP Transmission of Uncompressed Video Technology *By Liu Qinshan, Li Xiaoyu*

45 Research on Quality Evaluation Methods for IP Audio and Video Data Transport Streams *By Wang Hongsheng, Lei Xingguo, Cao Kai*

49 Construction of Information Security Defense System in Omnimedia Communication *By Wang Manni, Hu Yingbin*

53 Design and Implementation of Slow Live Broadcasting Platform of Prefecture-level Cities *By Zhu Kai, Cheng Ben*

59 Design and Practice of Technical Scheme of Provincial IP-based Radio and Television Program Integration Platform *By Feng Xiuyan*

64 A Case Study on the Relocation and Reconstruction of High-definition Broadcasting System of Provincial Broadcasting and Television Station *By Wang Wei*

69 Analysis of Maintenance Measures for Intelligent Network Broadcast Control System *By Guo Jianming*

73 Renovation of Lighting Systems and Design of Lamp Position in Medium-sized Comprehensive Studios *By Niu Zhi*

## CATV

77 Construction and Application of Radio and Television Network User Portrait Based on Multi-source Heterogeneous Data Model *By Li Cheng*

81 Application of Watermark Camera in Refine Management of CATV Engineering *By Xu Hui, Li Shengming*

85 Design and Implementation of Fault-Aware Storage System for CATV Headend *By Chen Hao, Qiu Chengjun, Wei Zhiyang*

90 Design and Application of Audio Multi-mode Presentation Based on the Set-top Box Terminal *By Gu Luoyi*

## Wireless Coverage

96 Practice of Broadcasting Four Sets of HD Programs on Single Channel of Terrestrial Digital TV *By Deng Chuxiong, Liu Dexiang, Tong Longwen*

99 Interworking Architecture and Scheme of 5G High Tower Broadcasting and 5G Core Network *By Lv Rui, Deng Lunhui, Wang Feifei*

105 Design and Application of the Whole Service Information System for Radio and Television Relay Station *By Pan Bingbo*

109 Design of Coaxial Switch System for Medium-wave Antenna Based on LabVIEW and SCM *By He Jixiang*

113 Analysis of Ionospheric Influence on Short-wave Broadcasting Propagation *By Hai Xia*

## Safe Broadcasting & Monitoring and Supervision

116 Research and Implementation of DC Detection Method for AES/EBU Digital Audio Signal *By Zhu Zulai, Sun Jianmin, Dong Xiaopo*

121 Design and Application of Safe Broadcasting Assistant Prompt System Based on Computer Vision and Deep Learning *By Li Yijun*

127 Application of Network Intrusion Detection in TV Broadcasting System *By Ji Yijun*

132 Design and Implementation of the Illegal Broadcasting Monitoring System *By Qin Shaojun, Bi Tao, Meng Chunchan*

136 Broadcast Intelligent Master Control Monitoring System Based on AoIP and AI Technology *By Zhang Hongxiang*

## Elaboration & Commentary

139 Analysis of ITU-R SG6 Proposal "A Vision for the Future of Broadcasting" *By Li Leilei*

143 Analysis of Audio-visual Media Microservice Technology and Architecture *By Zhou Jianwei, Ding Xun*



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# Index

**One of Hundred National Key Periodicals**  
**A Core Professional Sci-Tech Periodical**  
[tougao.lieku.cn](http://tougao.lieku.cn)

Dec 2022 No.12

## [ 15 ] Discussion on the Construction Standards of Provincial Smart Radio and Television Station System

In the process of intelligent construction of Radio and Television transmitting stations, a systematic and standardized construction mode should be established to form unified requirements, architecture and functions, and the technical level of the system should be improved through top-level design. This paper analyzes the technical architecture, functional requirements, construction standards and deployment plans of smart stations, and proposes that the construction of smart stations should be classified, unified interconnected, intelligent, and using a cloud platform, which can be used for reference by the industry.

## [ 30 ] Application of 5G-700MHz Miniaturized Antennas in Urban Dense Buildings

In order to meet the deep coverage requirements of 5G networks in complex urban building environments, the deployment and installation density of base station antenna devices must be improved and increased. The miniaturized 700M 5G antenna can not only increase the quality of signal transmission, but also realize the installation in densely built areas. It is an effective means of deep coverage of 5G networks. This paper takes the mobile miniaturized 700M antenna base station deployed in Beijing as an example to introduce its implementation scheme and coverage effect. Its successful deployment provides a feasible solution to the problem of mobile signal deep coverage in urban densely built areas.

## [ 41 ] Research and Practice of IP Transmission of Uncompressed Video Technology

In recent years, with the continuous development of IP-based transmission of uncompressed video technology, SMPTE has successively released the ST 2022-6 standard and the ST 2110 series standard. The paper compares the differences between the two standards and considers that the ST 2110 series standard has more obvious advantages over the ST 2022-6 in terms of bandwidth saving and independent processing of different data. It also gives strategies and suggestions for the evolution from SDI to IP for reference.

## [ 77 ] Construction and Application of Radio and Television Network User Portrait Based on Multi-source Heterogeneous Data Model

With the upgrading of wired digital set-top boxes, a considerable number of set-top box terminals support bidirectional transmission functions. The increasingly perfect terminal data provides a technical possibility for radio and television operators to carry out refined operations. At the same time, how to efficiently and safely apply data has become a problem that radio and television operators need to discuss and solve. Jiangsu Cable has widely applied the radio and television digital user portrait function to various platforms and equipment terminals such as WeChat, integral systems, IP set-top boxes, etc., improving marketing efficiency, ensuring service quality, and further improving user satisfaction. The practice of radio and television networks user portrait based on a multi-source heterogeneous data model in this unit is worthy of reference for colleagues in the industry.

## [ 132 ] Design and Implementation of the Illegal Broadcasting Monitoring System

Illegal broadcasting has the characteristics of being difficult to find, locate, obtain evidence and detect, which seriously interferes with the radio wave order. This paper designs and develops a set of effective illegal broadcast detection system with complete functions, small size, low power consumption, convenient installation and low price, which can effectively monitor and combat illegal broadcasting, and has good economic and social benefits.