

IEEE TRANSACTIONS ON CONSUMER ELECTRONICS

FEBRUARY 2004

VOLUME 50

NUMBER 1

ITCEDA

(ISSN 0098-3063)

A Publication by the IEEE Consumer Electronics Society

Administrative Committee	i
Officers and Committee Chairmen	ii

CAMERA/DISPLAY/TRANSDUCER SYSTEMS

Membership Function Adaptive Fuzzy Filter for Image Sequence Stabilization.....	<i>M. Kemal Güllü and Sarp Ertürk</i>	1
An Efficiently Revised Sustain Driver for AC Plasma Display	<i>Feel-soon Kang and Seok-Gyu Oh</i>	8
Digital Camera Zooming Based on Unified CFA Image Processing Steps	<i>Rastislav Lukac, Karl Martin and Konstantinos N. Plataniotis</i>	15
Power Minimization in a Backlit TFT-LCD Display by Concurrent Brightness and Contrast Scaling	<i>Wei-Chung Cheng and Massoud Pedram</i>	25
Line Time Extension Driving Method for a-Si TFT-LCDs and Its Application to High Definition Televisions	<i>Byong-Deok Choi and Oh-Kyong Kwon</i>	33
Automated Estimation of Misconvergence in Color Monitors	<i>Kwang Wee Lee and Ashraf A. Kassim</i>	39
An Ultra-low Power Operating Technique for Mega-pixels Current-mediated CMOS Imagers	<i>Farid Boussaid, Amine Bernak and Abdesselam Bouzerdoum</i>	46

COMMUNICATIONS

Nonlinear Analysis of the Phase Noise in the OFDM Communication System.....	<i>Heung-Gyoon Ryu, Ying Shan Li and Jin-Soo Park</i>	54
Techniques Improving the Transmission Reliability in High-Rate Wireless LANs	<i>Mi-Jeong Kim, Joo-Hee Moon and Hyoung-Kyu Song</i>	64
Frequency Offset Estimation for OFDM in Wireless Communications.....	<i>Bo Ai, Jian-hua Ge, Yong Wang, Shi-yong Yang and Pei Liu</i>	73
ICI and ISI Analysis and Mitigation for OFDM Systems with Insufficient Cyclic Prefix in Time-Varying Channels.....	<i>Shaoping Chen and Cuitao Zhu</i>	78
A Soft Decision Decoding Scheme for Wireless COFDM with Application to DVB-T.....	<i>Yong Wang, Jianhua Ge, Bo Ai, Pei Liu and Shiyong Yang</i>	84
Dummy Sequence Insertion (DSI) for PAPR Reduction in the OFDM Communication System	<i>Heung-Gyoon Ryu, Jae-Eun Lee and Jin-Soo Park</i>	89
Performance and Conformance Results of the Deterministic DVB-T Equalizer	<i>R. Simon Sherratt</i>	95
Fundamental Analysis for Visible-Light Communication System using LED Lights.....	<i>Toshihiko Komine and Masao Nakagawa</i>	100
Interference Cancellation for OFDM Systems in Presence of Overlapped Narrow Band Transmission System	<i>Dan Zhang, Pingyi Fan and Zhigang Cao</i>	108
Preamble Structure for Single Frequency Cellular Systems Using Orthogonal Frequency Division Multiplexing	<i>Dong Seung Kwon, Hyoungsoo Lim and Han-kyu Park</i>	115
Improvement of Power Efficiency of HPA by the PAPR Reduction and Predistortion	<i>Heung-Gyoon Ryu, Tran Phuong Hoa, Kang Mi Lee, Sang-Woo Kim and Jin-Soo Park</i>	119
A Novel Uplink Channel Estimation in OFDM-CDMA Systems.....	<i>Kan Zheng, Guoyan Zeng and Wenbo Wang</i>	125
WAP-Teletext System	<i>N. Sriskanthan, P. K. Meher, G. S. Ng and C. K. Heng</i>	130
Advanced Mirrored-Pyramid Broadcasting for Video-on-Demand	<i>Zhenghua Zhang, Songyu Yu, Junhua Chen and Kaiyan Chu</i>	139

NETWORKS

Requirements and Referential Software Architecture for Home Server based Inter-Home Multimedia Collaboration Services	<i>Kyung Hee Lee, Doo-hyun Kim, Jiyong Kim, Dongmyung Sul and Sung Ho Ahn</i>	145
Positioning Bluetooth® and Wi-Fi™ Systems	<i>Antonio E. Salloum Salazar</i>	151
Multi-Stages Hybrid ARQ with Conditional Frame Skipping and Reference Frame Selecting Scheme for Real-Time Video Transport Over Wireless LAN	<i>Min Chen and Gang Wei</i>	158
A Shared Cache Solution for the Home Internet Gateway.....	<i>Hyokyung Bahn</i>	168
Home Automation Network Supporting Plug-and-Play.....	<i>Zhaohui Ye, Yindong Ji and Shiyua Yang</i>	173

RECORD/PLAYBACK/STORAGE SYSTEMS

Fast Multiplication-free QWDCT for DV Coding Standard	<i>Antonio Silva, Paulo Gouveia and Antonio Navarro</i>	180
Design of a Stable Gain Scheduling Controller for Optical Disc Players	<i>EunHee Kim and Jun-Ho Oh</i>	188
A Flash Compression Layer for SmartMedia Card Systems.....	<i>Keun Soo Yim, Hyokyung Bahn and Kern Koh</i>	192
High-Speed DVD-Multi Drive System	<i>Koichiro Nishimura, Shinrou Inui, Masaaki Kurebayashi, Toshimitsu Kaku and Akihiro Asada</i>	198

SECURITY SYSTEMS

Weaknesses and Improvements of an Efficient Password Based Remote User Authentication Scheme Using Smart Cards	<i>Wei-Chi Ku and Shuai-Min Chen</i>	204
Efficient Architecture and Hardware Implementation of the Whirlpool Hash Function	<i>Paris Kitsos and Odysseas Koufopavlou</i>	208
Design and Implementation of a Private and Public Key Crypto Processor and Its Application to a Security System	<i>HoWon Kim and Sunggu Lee</i>	214

(Continued on back cover)

CONTENTS (Continued from front cover)

Key Distribution Based on Hierarchical Access Control for Conditional Access System in DTV Broadcast	
.....Tianpu Jiang, Shibao Zheng and Baofeng Liu	225
A New Authentication Scheme with Anonymity for Wireless Environments.....	Jianming Zhu and Jianfeng Ma 231
An Implementation of Wireless Sensor Network for Security System using Bluetooth	
.....Soo-Hwan Choi, Byung-Kug Kim, Jinwoo Park, Chul-Hee Kang and Doo-Seop Eom	236
Preparing Smartcard for the Future: From Passive to Active	Pak-kee Chan, Chiu-sing Choy, Cheong-fat Chan and Kong-pang Pun 245
Efficient Multi-server Password Authenticated Key Agreement Using Smart Cards	Wen-Sheng Juang 251
SIGNAL PROCESSING	
A Novel Cost Effective Demosaicing Approach.....	Rastislav Lukac, Konstantinos N. Plataniotis, Dimitrios Hatzinakos and Marko Aleksic 256
Low-Power Multiplierless DCT Architecture Using Image Data Correlation.....	Hyeonuk Jeong, Jinsang Kim and Won-kyung Cho 262
Frame Accuracy Seamless Splicing of MPEG-2 Video Streams in Compressed Domain.....	Guohua Cheng, Yuanhua Zhou and Yihong Zhao 268
Managing Multimedia Data Services with Multiple Ensemble Decoding Architecture in Digital Audio Broadcasting System	
.....Sammo Cho, Soo In Lee and Hyuckjae Lee	274
Computational-Complexity Scalable Motion Estimation for Mobile MPEG Encoding	Stephan Mietens, Peter H.N. de With and Christian Hentschel 281
An Efficient Architecture for Adaptive Deblocking Filter of H.264/AVC Video Coding.....	Miao Sima, Yuanhua Zhou and Wei Zhang 292
Perceptual Codec and Interaction Aware Payout Algorithms and Quality Measurement for VoIP Systems	
.....Kuo-Kun Tseng, Yuan-Cheng Lai and Ying-Dar Lin	297
Building MPEG-7 Transcoding Hints from Intrinsic Characteristics of MPEG Videos.....	Chia-Chiang Ho, Jin-Hau Kuo and Ja-Ling Wu 306
A Multi-Loop Voltage-Feedback Filterless Class-D Switching Audio Amplifier using Unipolar Pulse-Width-Modulation	
.....Alejandro R. Oliva, Simon S. Ang and Thuy V. Vo	312
Chromatic Encoding: a Low Power Encoding Technique for Digital Visual Interface	Wei-Chung Cheng and Massoud Pedram 320
A Novel Error Recovery Scheme for H.264 Video and Its Application in Conversational Services	Hong-Bin Yu, Ci Wang and Songyu Yu 329
Content-adaptive Spatial Error Concealment for Video Communication.....	Zhang Rongfu, Zhou Yuanhua and Huang Xiaodong 335
Optimal Frame Memory and Data Transfer Scheme for MPEG-4 Shape Coding	
.....Kun-Bin Lee, Hao-Yun Chin, Nelson Yen-Chung Chang, Hui-Cheng Hsu and Chein-Wei Jen	342
A Vario-Power ME Architecture Using Content-Based Subsample Algorithm.....	Hsien-Wen Cheng and Lan-Rong Dung 349
Effective Use of Spatial and Spectral Correlations for Color Filter Array Demosaicking	Lanlan Chang and Yap-Peng Tan 355
Algorithmic Optimizations for Software-only MPEG-2 Encoding.....	Ramkishor Korada, P. S. S. B. K. Gupta, T. S. Raghu and K. Suman 366
Design and Implementation of an RNS-Based 2-D DWT Processor.....	Yong Liu and Edmund M-K. Lai 376
SOFTWARE FOR CONSUMER PRODUCTS	
Embedded Software Synthesis and Prototyping	Trong-Yen Lee and Pao-Ann Hsiung 386
TV3P: An Adaptive Assistant for Personalized TV	Zhiwen Yu and Xingshe Zhou 393
