
Seoul, South Korea
14 – 16 December 2015
![Image of a page from a document showing a table of contents for a conference session on December 15th, listing presentations on various topics such as substrate noise isolation, high-bandwidth memory, and 3D IC design.]
15:00~15:20 | TS-1-4
- Virtual Metrology for TSV Etch Depth Measurement using Optical Emission Spectroscopy
  Ja Myung Gu, Sang Jeen Hong
  (Myongji University)

15:40~16:00 | TS-2-1
- Stable Recursive Convolution for Channel Response Calculation with Causality Enforcement
  Mikheil Tsiklauri, Mikhail Zvonkin, Nana Dikhaminjia, Jun Fan, James Drewniak
  (Missouri University of Science & Technology)

16:00~16:20 | TS-2-2
- Nonlinearity of Digital I/Os and Its Behaviour Modeling
  He Ming Yao¹,², Huan Huan Zhang¹, Li Jun Jiang¹
  (The University of Hong Kong¹)
  Hui Chun Yu², Xing Yun Luo², Bin Li², Hua Sheng Ren²
  (Huawei Technologies Co., Ltd²)
  (Beihang University³)

16:20~16:40 | TS-2-3
- Miniaturization of Planar EBG Structure Using Interdigital Electrodes
  Yuki Yamashita¹, Yoshitaka Toyota¹, Kenro Iokibe¹
  (Okayama University¹)
  Koichi Kondo², Shigeyoshi Yoshida²
  (NEC TOKIN Corporation²)
  Toshiyuki Kaneko³
  (KYOCERA Circuit Solutions Corporation³)

16:40~17:00 | TS-2-4
- Characteristic Impedance of Asymmetrical Differential Traces: Closed–Form Relations for Signal Integrity Analysis
  Ihsan Erdin¹
  (Celestica Inc.¹)
  Ramachandra Achar²
  (Carleton University²)

Poster Session
Coex Room 308, Dec. 15 Tue 17:00~18:30
Session Chair: Yong Bae Park (Ajou University), Eunyong Chung (Intel)

P-1
Improved Algorithm for Delay Extraction Using Hilbert Transform
Jia-Yi Wu¹, Qian-Hua Jian¹, Mu-Shui Zhang¹
  (Sun Yat-sen University¹)
Hong-Zhou Tan²(SYSU Huadu Industrial Science and Technology Institute Guoguang industrial park²)

P-2
Design of an On-interposer Passive Equalizer Embedded on a Ground Plane for 30Gbps Serial Data Transmission
Yeseul Jeon, Heegon Kim, Sumin Choi, Jinwook Song, Youngwoo Kim, Joungho Kim
  (KAIST)

P-3
Analysis of External Force Dependent Lumped RLGC Model of High-bandwidth and High-density Silicone Rubber Socket
Junyong Park¹, Hyesoo Kim¹, Youngwoo Kim¹, Jonghoon J. Kim¹, Bumhee Bae¹, Joungho Kim¹
  (KAIST¹)
Dongho Ha², Michael Bae²
  (Silicone Rubber Contactor²)
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Madhavan Swaminathan³ (Georgia Institute of Technology³)

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Electrical Approach to Acoustic Noise for MLCCs of Power Delivery Network in Mobile System
Hyunho Baek, Dongho Yu, Junho Lee, Hwanwoo Shim, Joong-Ho Kim (Samsung Electronics) 62

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Identification of Parameter Domain for the Design of High-Speed I/O Interface
Seungwon Kim¹, Ki Jin Han¹ (Ulsan National Institute of Science and Technology¹) 67
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Measurement and Analysis of the Electromagnetic Emanations from Video Display Interface
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Kyuhong Sim² (Electronic Warfare R&D Lab LIG Nex¹²)

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Yu-Jung Huang², Chun-Yi Wang² (Department of Electronic Engineering I-Shou University²)

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Analysis of High Frequency Characteristics of Power Inverter using Accurate IGBT Model based on Datasheet and Measurement
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In-Myoung Kim², Young-II Kim² (ENERCONST. Co., Ltd²)

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Venky Sundaram², Rao Tummala² (Georgia Institute of Technology²)

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Kibum Kang², Taisik Yang², Yun Ra², Woohyun Paik² (LG Electronics²)
P-13
Electrical Characteristics Analysis and Comparison between Through Silicon Via(TSV) and Through Glass Via(TGV)
Jihye Kim¹, Insu Hwang¹, Youngwoo Kim¹, Heegon Kim¹, Joungho Kim¹
Venky Sundaram², Rao Tummala²
(KAIST¹) (Georgia Institute of Technology²)

P-15
The Design of High Gain Amplifier with Transformer Feedback Combination
Suk-hui Lee¹, Ki-Jin Kim¹, K.H. Ahn¹
Sung-il Bang²
(KETI¹) (Dankook University²)

P-16
Crosstalk Analysis and Suppression for Differential TSVs in 3-D Integration
Sheng Liu¹, Cheng Huang¹ (Nanjing University of Science and Technology¹)
Wei Zhuang², Wanchun Tang² (Nanjing Normal University²)

P-17
A Fast Statistical Eye-diagram Estimation Method including Internal PDN Noise of Pseudo-differential Receiver Buffer
Heegon Kim¹, Sumin Choi¹, Jonghoo J. Kim¹, Daniel H. Jung¹, Hyunsuk Lee¹, Kyungjun Cho¹, Joungho Kim¹
Hyungsoo Kim², Yongju Kim², Yunsaeing Kim²
(KAIST¹) (SK Hynix Semiconductor Inc. ²)

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Surface Current Distribution for PCB PDN Geometry
Biyao Zhao¹, Siqi Bai¹, Chenxi Huang¹, Jun Fan¹, Albert Ruehli¹, James Drewniak¹
Hanqin Ye², Erping Li² (Missouri University of Science and Technology¹)
Brice Achkir³ (Zhejiang University²)
Bruce Archambeault², Samuel Connor³, Michael Cracraft³, Matteo Cocchini³ (IBM Corporation³)

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Gain Variation of 60-GHz Patch Antennas Due to Ground Plane Dimensions
Haekyo Seo, Dong Gun Kam (Ajou University)

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Quantifying the Impact of Differential-to-Common Mode Conversion on RFI
Woocheon Park, Dong Gun Kam (Ajou University)

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Design Space Exploration of Nanoscale Interconnects with Rough Surfaces
Somesh Kumar, Rohit Sharma (Indian Institute of Technology Ropar)

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Fast Insertion Loss Estimation Method For Meshed Ground By Shape Conversion
Minkyu Shim, Jiheon Yu, Hyunho Baek, Junho Lee, Joong-Ho Kim (Samsung Electronics)

P-23
Fast Calculation of System-Level ESD Noise Coupling to a Microstrip Line Using PEEC Method
Junsik Park¹, Jingook Kim¹ (UNIST¹)
Jongsung Lee², Seongmoo Kim², Byongsu Seol² (Samsung Electronics Co. ²)
P-24
Analytical Calculation of Electromagnetic Fields near Parallel Power Planes with Decoupling Capacitors for RF Interference Estimation
Sangyeong Jeong¹, Jingook Kim¹ (UNIST¹)
Booho Jung², Kichul Hong², Hyungsoo Kim², Yun-Saing Kim² (SK Hynix²)

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Efficient Calculation of EMI Factors from Power Distribution Network using Cavity Resonance Circuit Model
Dongil Shin¹, Junsik Park¹, Jingook Kim¹ (UNIST¹)
Namsu Kim², Jongjoo Lee², Youngwoo Park² (Samsung Electronics²)

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Safety and Reliability Verification Process of Coil Module in Wireless Power Transfer System using Circuit Level Sensitivity Simulation
Jonghoon Kim, Jonghoon J. Kim, Hongseok Kim, Chiuk Song, Jinwook Song, Yeonje Cho, Sukjin Kim, Sunkyu Kong, Seungtaek Jeong, Joungho Kim (KAIST)

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Formulation of Mode Conversion in Differential Transmission Lines with Bend Discontinuity
Keita Takariki, Kengo Iokibe, Yoshitaka Toyota (Okayama University)

P-29
A Novel Packaging Method of Fully Passive Optical Alignment for Multi-Chennel Optical Interconnection Module
Kwon-Seob Lim¹,², Hyun Seo Kang¹ (ETRI¹)
Jae-Hyung Jang² (Gwangju Institute of Science and Technology²)

P-30
Analysis of Illuminated Bent Microstrip Line Based on Baum-Liu-Tesche (BLT) Equation
Sheng-Jie Guo, Lin-Sheng Wu, Min Tang, Jun-Fa Mao (Shanghai Jiao Tong University)

P-31
Design of Active Connector for High Speed Serial Link Interconnection
Bumhee Bae¹ (Samsung Electronics¹)
Junyong Park², Joungho Kim² (KAIST²)
Wednesday, December 16

Special Session 2: Multi-Physics Simulation Techniques
Coex Room 307, Dec. 16 Wed 09:40–11:00
Session Chair: Dries Vande Ginste (Ghent University), Wansoo Nah (Sungkyunkwan University)

09:40–10:00 | SS-2-1
- Fast Transient Electro-Thermal Simulation of On-Chip Interconnects in the Presence of ESD Pulses
  Guangcao Fu, Min Tang, Qiangqiang Feng, Peng Bian, Junfa Mao
  (Shanghai Jiao Tong University)

10:00–10:20 | SS-2-2
- Acceleration of Large Electromagnetic Simulation Including Non-orthogonally Aligned Thin Structures by Using Multi-GPU HiE/C-FDTD Method
  Yuta Inoue, Hideki Asai
  (Shizuoka University)

10:20–10:40 | SS-2-3
- Non-Orthogonal 2.5D PEEC for Power Integrity Analysis
  Bibhu Prasad Nayak¹,², Dipanjan Gope¹
  Sreenivasulu Reddy Vedicherla²
  (Indian Institute of Science¹, Robert Bosch Engineering and Business Solution Limited²)

10:40–11:00 | SS-2-4
- Fast Thermal Analysis of TSV-Based 3D-ICs by GMRES with Symmetric Successive Over-Relaxation (SSOR) Preconditioning
  Jianping Zhu¹
  Yingying Liu², Wei Zhuang², Wanchun Tang²
  (Nanjing University of Science and Technology¹, Nanjing Normal University²)

Session 3: High-Speed Channels and Interconnects
Coex Room 307, Dec. 16 Wed 11:20–12:40
Session Chair: Jai Narayan Tripathi (ST Microelectronics), Jingook Kim (UNIST)

11:20–11:40 | TS-3-1
- A Case Study: Power Measurement and Optimization of DDR3 DIMM in Servers
  Anil B. Lingambudi¹, Siddharth Vijay¹
  Michael Pardeik²
  Wiren D. Becker³
  (India Systems Development Lab, IBM Systems¹, Server Memory Development, IBM Systems², Server Group System Design, IBM Systems³)

11:40–12:00 | TS-3-2
- Power and Ground Co-Reference Design for 16-32Gbps Transceiver Packages
  Siow Chek Tan, Hong Shi, Sarajuddin Niazi
  (Xilinx Inc.)

12:00–12:20 | TS-3-3
- Plating Impacts on Transmission Characteristics of High-Speed Interface Connectors
  Taegyu Bae¹, Tae-Wan Koo¹, Jong-Gwan Yook¹
  Myung-Hyun Park²
  (Yonsei University¹, Foosung Tech. Co., Ltd.²)
12:20~12:40 | TS-3-4
- Statistical Estimation of Characteristic Impedance Distribution caused by PCB Manufacturing Process Variation in High-Speed Mobile Channels
  Kiyeong Kim, Junho Lee, Eunjoo Hong, Daewoong Kim, Hwanwoo Shim, Joong-Ho Kim
  (Samsung Electronics) 193

Session 4: IC & Package Level EMC
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Session Chair: Lijun Jiang (The University of Hong Kong), Jonghoon Kim (KAIST)

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- Design of Stackup and Shorting Vias and for Reducing Edge Radiation in Multilayer PCB
  Kai-Bin Wu, Cheng-Yu Lin, Shih-Ya Huang, Ruey-Beei Wu (National Taiwan University) 197

14:20~14:40 | TS-4-2
- Electric and Magnetic Field Shielding Evaluation of Board Level Shield Can Using TEM Cell
  Hyuntae Jang1, Jaedeok Lim1, Yongwon Lee1
  Hosang Lee2, Wansoo Nah2 (Samsung Electronics1, Sungkyunkwan University2) 201

14:40~15:00 | TS-4-3
- Post-fabricated EBG Tape on Electronic Devices for RFI Mitigation in WLAN Bands
  Wen-Yi Hsu1, Chi-Kai Shen1, Tzong-Lin Wu1
  Chung-Hao Chen2, Dong-Ho Han2 (National Taiwan University1, Intel Corporation2) 205

15:00~15:20 | TS-4-4
- Design of On-chip Power Noise Sensing Circuit and Its Applications
  Hai Au Huynh, SoYoung Kim (Sungkyunkwan University) 209

Session 5: SI/PI II
Coex Room 307, Dec. 16 Wed 15:40~17:00
Session Chair: Min Tang (Shanghai Jiao Tong University), Kyoungchoul Koo (Samsung Electronics)

15:40~16:00 | TS-5-1
- Robust Method for Analysis of Power Distribution Networks
  Ki Jin Han1 (Ulsan National Institute of Science and Technology1)
  Bill Martin2 (E-System Design2)
  Madhavan Swaminathan3 (Georgia Institute of Technology3) 213

16:00~16:20 | TS-5-2
- Extended CPM for System Power Integrity Analysis
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16:20~16:40 | TS-5-3
- Reduction of P/G Impedance by Edge Plating
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16:40~17:00 | TS-5-4
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  Jingook Kim (Ulsan National Institute of Science and Technology) 225