제IDEC-15-C008호

Best Demo Award

Design of High Efficient CMOS RF Energy Harvesting Rectifier using a Body Bias Feedback

Junsik Park, Seungwook Lee, and Yongchae Jeong
전북대학교

귀하는 2015 IDEC SoC Congress Chip Design Contest에서 우수 Design으로 선정 되었기에 이 상을 드립니다.

2015년 09월 22일

반도체설계교육센터

소 장 박 인 철

FUSION
HALL

4F
암전이세
KAIST 나노융합연구소
그래핀 연구센터
강의실 G
세미나실 Cyan, Green

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Design of High Efficient CMOS RF Energy
Harvesting Rectifier using a Body Bias Feedback

1. OUTLINE

4. CHIP IMPLEMENTATION AND RESULTS

이승욱

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3F
KAIST 홍보관
융복합기반 휠스
재난학연구소
KI 운영팀
KI 교수회의실
강의실 B

Lecture Room

2F
매트릭스홀
커넥트룸

1F
강당 Fusion Hall
양자터널링측정센터
나노-바이오 구조다이나믹스 연구단

B1F
클린룸

Quantum Tunneling Metrology Center
Nano-Bio Structural Dynamics Lab
Clean Room
KAIST Center for LED Research
KAIST Arena w/ Real-time Positioning Env

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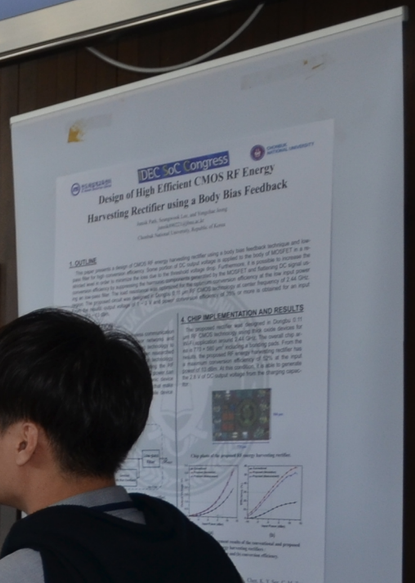

박준식

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FLOOR DIRE

5F

KAIST 공기술연구소
Health Science 센터
사우디 아람코 - KAIST CO_2 Management 센터
EEWS
강의실 R
세미나실 Red, Yellow

Saudi
EEWS
Lecture Room R
Cube 3,4

4F

KAIST 바이오융합연구소
임전이제어연구센터
KAIST 나노융합연구소
그래핀 연구센터
강의실 G
세미나실 Cyan, Green

KI for the BioCentury
Cancer Metastasis Control Center
KI for the NanoCentury
Graphene Research Center
Lecture Room G
Cube 1, 2

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Design of High Efficient CMOS RF Energy Harvesting Rectifier using a Body Bias Feedback

1. OUTLINE

2. INTRODUCTION

3. CIRCUIT DESCRIPTION

4. CHIP IMPLEMENTATION

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Junsik Park, Seungwook Lee, and Yongchae Jeong

Chonbuk National University, Republic of Korea

1. OUTLINE

4. CHIP IMPLEMENTATION AND RESULTS

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REFERENCE

Design of multimedia system controller with Core-A processor

DEC SoC Congress

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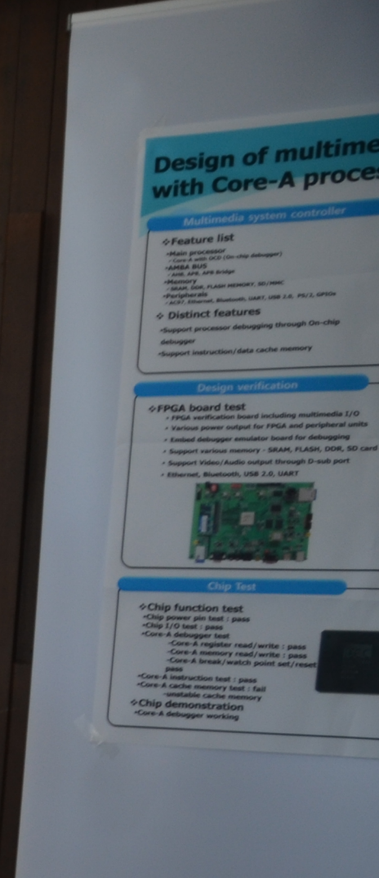
4. CHIP IMPLEMENTATION AND RESULTS


Design of multime
with Core-A proces
Multimedia system controller
Feature list
Distinct features
Design verification
FPGA board test
Chip Test
Chip function test
Chip demonstration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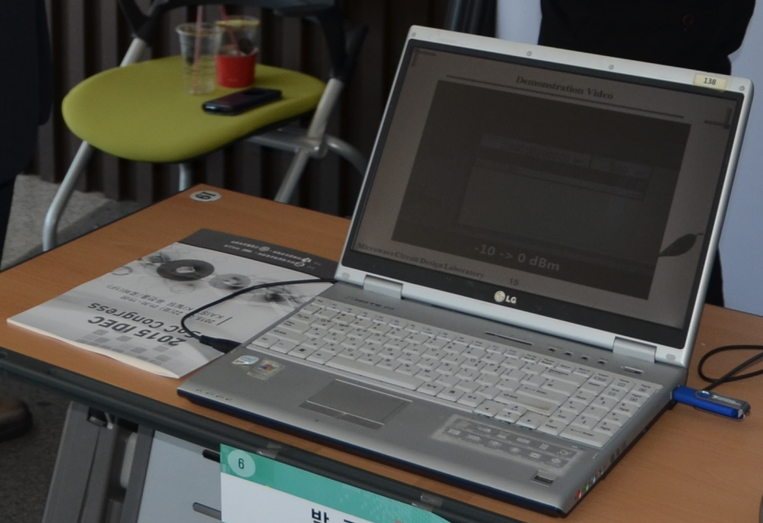
Demonstration Video
-10 -> 0 dBm
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with Core-A processor

Multimedia system controller

✧Feature list
- Main processor
- Core-A with GCC (On-chip debugger)
- AMBA BUS
- ASB, APB, AHB bridge
- Memory
- SRAM, DDR, FLASH MEMORY, SD/MMC
- Peripherals
- AC97, Ethernet, Bluetooth, UART, USB 2.0, PS/2, GPIOs

✧ Distinct features
- Support processor debugging through On-chip debugger
- Support instruction/data cache memory

Design verification

✧FPGA board test
- FPGA verification board including multimedia I/O
- Various power output for FPGA and peripheral units
- Embed debugger emulator board for debugging
- Support various memory - SRAM, FLASH, DDR, SD card
- Support Video/Audio output through D-sub port
- Ethernet, Bluetooth, USB 2.0, UART

✧ASIC
- Samsung

Chip Test

✧Chip function test
- Chip power pin test : pass
- Chip I/O test : pass
- Core-A debugger test
  - Core-A register read/write : pass
  - Core-A memory read/write : pass
  - Core-A break/watch point set/reset pass
- Core-A instruction test : pass
- Core-A cache memory test : fail
  - unstable cache memory

✧Chip demonstration
- Core-A debugger working

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2015.09. 22 (화) 09:30~19:00 KAIST KI빌딩 퓨전홀/로비(1F)

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