



Electronic System group

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Research Area : Signal Processing 、 Image Coding 、 Embedded Multimedia system 、 Satellite Position System 、 Wireless Communication 、 Mobile communication

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1. Research Aims :

Research fields mainly focus on embedded multimedia and wireless communication system. Integrations of both two fields are also considered.

2. Under Processing Research Topic

1. Wireless IP Camera :

Try to integrate functional chip-set , reference circuit , peripheral , software to form a workable camera module for security surveillance use.

2. Mini Portable Multimedia Player :

Try to integrate MPEG4 coding scheme , panel , flash , Keypad to form a player platform for entertainment .

3. wireless presentation assistant :

It can be connected to projector to take the place of PC or notebook for presentation purpose. The IrDA is used for wireless control.

4. Bluetooth MP3 speaker :

Try to integrate MP3 and Bluetooth on the speaker for broadcasting.

5. SIP protocol :

Try to implement SIP protocol for the use of Wi-Fi phone which might be implemented on Marvell chip set.

6. Global positioning surveillance system :

Integrate Arm 、 GPRS 、 GPS 、 map , software for the surveillance purpose of mobile object.

7. heart beat 、 temperature ,Blood pressure health care surveillance system :

Try to integrate heart beat, temperature blood pressure and communication to form a nursing and health care surveillance system.

8. verilog model for AES 、 DES :

Build the verilog model for AES 、 DES for flexible application of FPGA to any security purpose system.

9. RFID system :

Integrate RFID, internet, mobile phone, database to a surveillance system.

3. Selected Publications

1. Shyi-Tsong Wu and Bin-Chang Chieu, "A User Friendly Remote Authentication Scheme with Smart Cards," Computers & Security, vol.22, no.6, pp.547-550, 2003

2. Shyi-Tsong Wu and Bin-Chang Chieu, "Identity-Based Key Agreement for Peer Group Communication from Pairings," IEICE Trans. Fundamentals, vol. E88-A, no.10, pp.2762-2768, 2005.