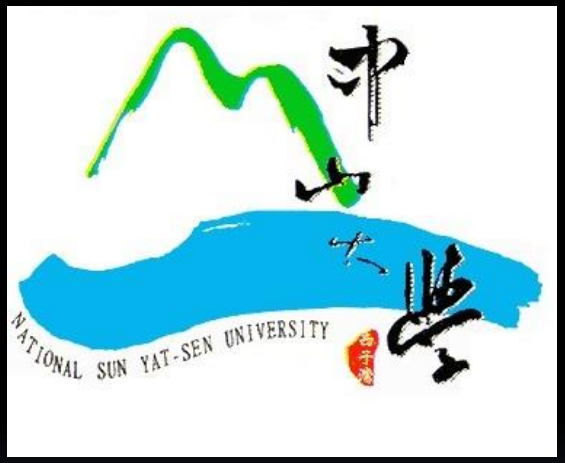
EXPLORING THE PHYSICS OF RF-ID



National Sun Yat-sen University
Deparment of Physics

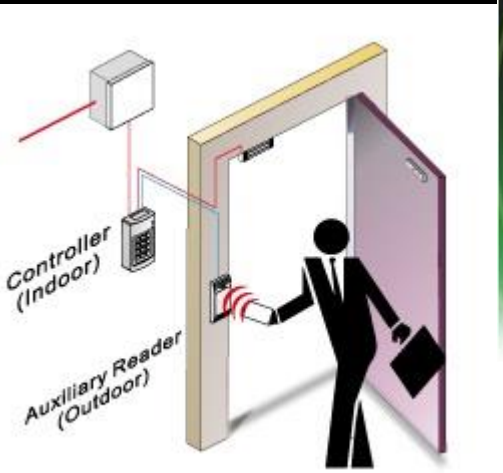
Members: Wang, Jhen-Yu (王振宇)
Lin, Tai-Te (林岱德)
Chang, Jia-Ming (張家銘)
Tu, Yi-Hsien (杜宜憲)
Lin, Chi-Hsuan (林季萱)
Wei, Tien-Yu (魏天妤)

Outlines

- Introduction: RF-ID Applications
- The Physics of RF-ID Reader
- The Signals Obtained by the Reader
- The Physics of RF-ID Tag
- Conclusion

RF-ID Applications

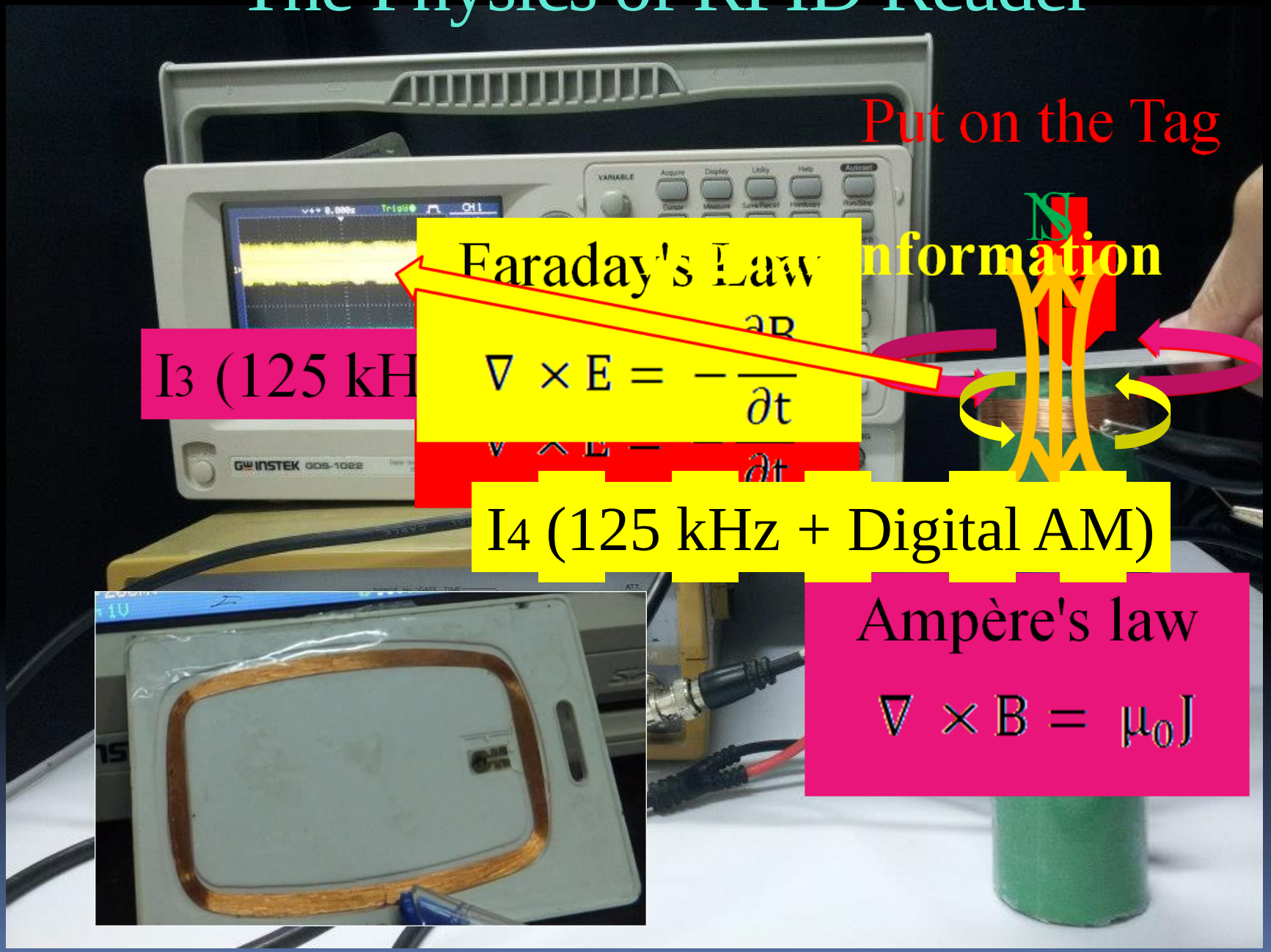
- Access Management of Restricted Area
- Tracking Objects
- Toll Collection and Contactless Payment



The Amazing RF-ID

- No Contact
- No Electrode
- No Battery

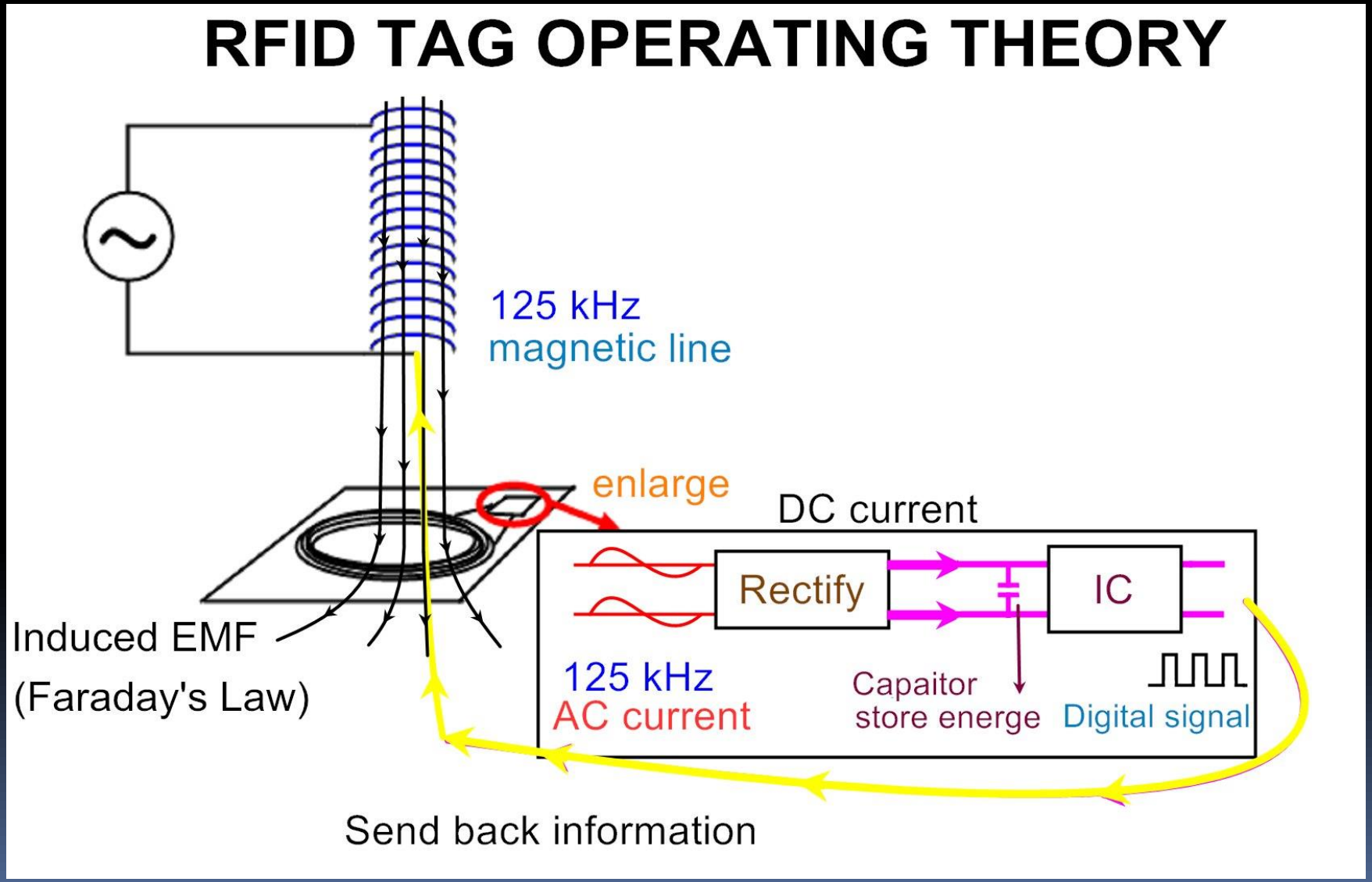
The Physics of RFID Reader



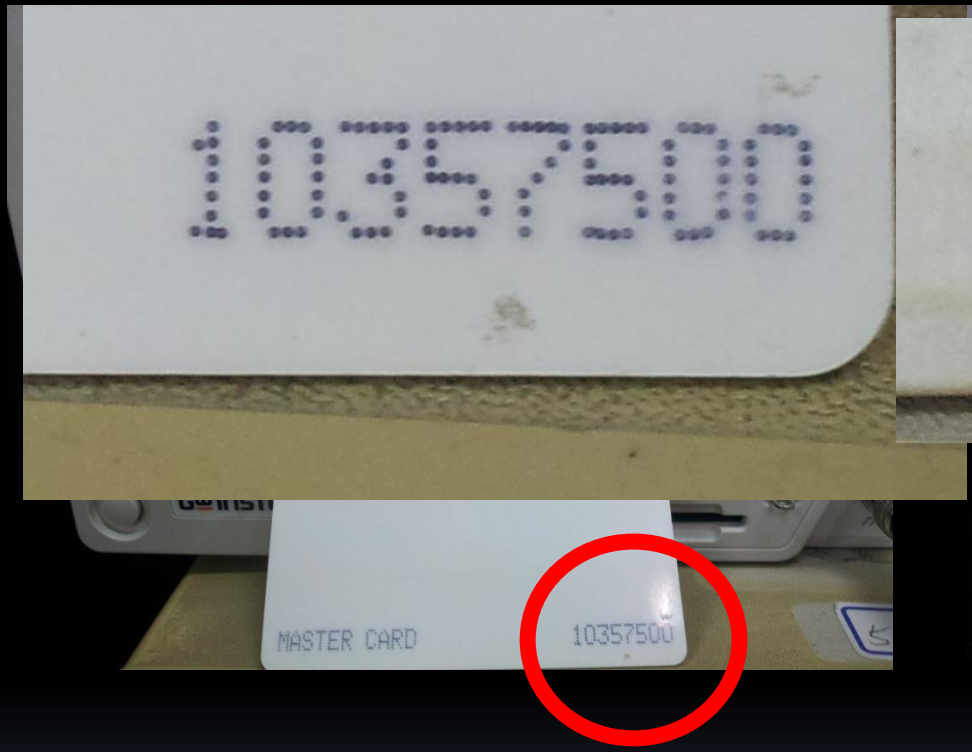
Demonstartion

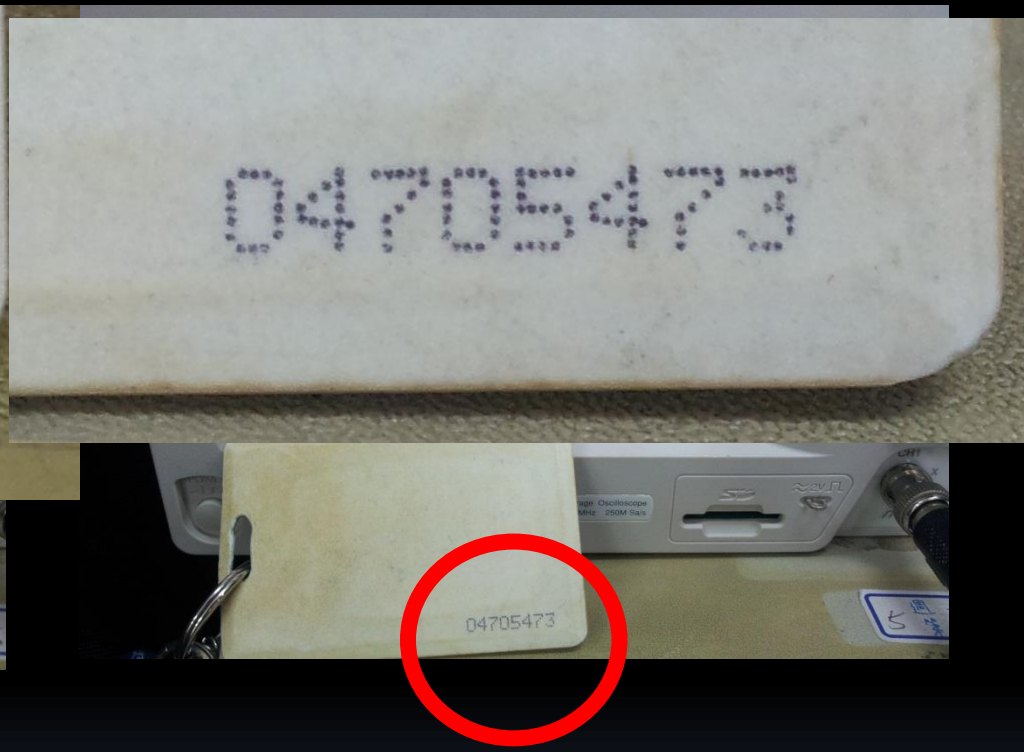
The Physics of RFID Tag

Block Diagram of the RF-ID System



The Signals Obtained by the Reader





- Each Tag Has a Set of Unique Serial Numbers
- Discrimating Tags by the Serial Numbers

Conclusion

- RF-ID reader is a 125 kHz AC generator + a coil
- RF-ID tag is a coil + a digital chip
- RF-ID is a technology governed by Faraday's Law and Ampère's Law

Thank You For Your Attention