

Radio Frequency Identification (RFID)

Introduction

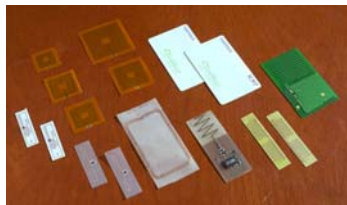
The Institute for Infocomm Research (I²R) has built up expertise in RFID since 1995, by designing and prototyping many systems targeted at different frequencies, ranges and applications. System architecture, small and efficient antenna design for the tag, highly efficient RF to DC power conversion and anti-collision algorithms for multiple tag access are some of the areas of expertise.

I²R has a number of patents to its credit and has successfully commercialised many of them. I²R is a member of GSI Singapore (previously known as Singapore Article Numbering Council) since 2001 and is currently a member of EPCglobal.

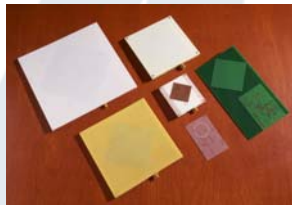
Research Focus

The current research and development is focused at various aspects of RFID system, Readers and Antenna.

- RFID Systems
- HF/UHF
- Active RFID tags
- RFID Security
- Item Level Tagging
- UHF Reader
- Range Enhancement
- Multi-Frequency Bands
- Multi-Protocols support
- Customised Antenna Design
- Reader Antenna
- Tag Antenna



RFID Tag Antennas



RFID Reader Antennas

Possible Applications

- Tracking of cargo, passenger baggage
- Tracking parts in manufacturing supply chain
- RFID ticketing
- Smart Shelf



Smart Shelf Antennas

Selected Completed Projects

- 2.45GHz RFID System for Toppan Electronics
- Wideband Tags for Container Tracking
- Contact Tracing System
- Smart Shelf for Library Book Tracking System
- Microwave Oven Leakage Detector



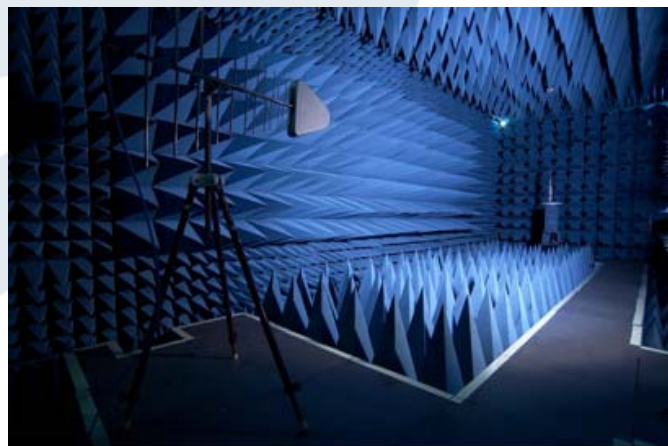
Contact Tracing System

Patents Granted

- US 6,693,599 RF Transponder
- US 5,945,938 RF Identification Transponder
- US 6,775,323 Data Coding System
- GB 2,335,573 An RF transponder identification system and protocol

Facilities

I²R has a range of test and measurement facilities for RFID development, antenna in particular. These include simulation software, measuring equipments and anechoic chamber that can do radio emission testing and RF immunity testing.



Anechoic Chamber

For further information, please contact:

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