EE6449
Electromagnetic Compatibility (EMC)

Theory, Design and Measurement

http://www.cityu.edu.hk/pg/current/course/EE6449.htm
Electromagnetic Compatibility

- Definition: The ability of an equipment or system to function satisfactorily in its environment without introducing intolerable electromagnetic interference to anything in that environment.

It is a statutory requirement globally to compile with EMC standards for all electronic products/devices.

EMC Diagnostics and Design

EMI scanning for PCB

EMI shielding products for IC

EMI filter

Ferrite beads for EMI suppression

http://en.wikipedia.org/wiki/Ferrite_bead
EMC Markings

- CCC
- CE
- FCC
EMC Markings

You may have seen this EMC markings in some of your electronic devices!!
EMC Tests

Anechoic Chamber

EMC Test for Vehicle

Electromagnetic compatibility (EMC) — Part 4-3: Testing and measurement techniques — Radiated, radio-frequency, electromagnetic field immunity test, BS EN 61000-4-3, 2006

Information technology equipment — Radio disturbance characteristics — Limits and methods of measurement, BS EN 55022, 2010

EMC Test for Information Equipment
Human safety due to EMC is a concern!

Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices — Human models, instrumentation, and procedures, BS EN 62209-1, 2006
Electromagnetic Compatibility

EE6449 aims to provide technical and information competence on:

- What is the EMC requirements.
- How to design the electronic products complying to EMC requirements.
- How to do the EMC tests.
- In launching an electronic product on the market!