

Title: Electromagnetic Compatibility

Teacher: Marco Dionigi

Contact: marco.dionigi@unipg.it

Indicative period: February 2022 – April 2022

ABSTRACT.

The objective of the module is to provide electromagnetic compatibility skills to students, regardless of their undergraduate education. These skills are of fundamental importance both in the electronic field and in the industrial and environmental fields since both the problems of interaction of the electromagnetic field with man-made devices and with organisms are addressed. In particular, the techniques for mitigating interference in systems and printed circuits and protecting against electromagnetic fields will be illustrated and applied by means numerical simulations.

PROGRAM

1. The electromagnetic compatibility problem
2. The transmission line model
3. Time domain propagation and signal integrity in lines and printed circuits
4. Multi-transmission line and crosstalk
5. Conducted emissions common mode differential mode
6. Radiated emissions
7. Radiated susceptibility
8. Conducted susceptibility
9. Shielding of systems and components
10. Electromagnetic safety and protection