



APTIV is a high-technology company that integrates safer, greener and more connected solutions for the automotive and transportation sectors. To fulfill the needs of our R&D center located in Epernon, France, we are looking for a candidate to prepare a:

PhD thesis on high-speed transmissions at millimeter waves

The offer:

You will be recruited for 3 years as a researcher / R&D engineer at the R&D center of APTIV Connection Systems and will prepare a PhD thesis in collaboration with the Institut d'Électronique et de Télécommunications de Rennes (IETR, www.ietr.fr). This research work will be carried out both at IETR, Rennes, France and at APTIV Connection Systems, Epernon, France.

Main missions and responsibilities:

The PhD offer is entitled:

Modeling and characterization of high-speed interconnects (antennas and transmission lines) at millimeter waves for automotive applications.

This research project aims to study high-speed transmission lines and interconnects at millimeter waves, covering non-exhaustive items list as below:

- Theoretical study of wave propagation on transmission lines at very high frequencies (dispersion analysis, propagation modes, insertion loss, etc.),
- Design of such transmission lines and material selection,
- Study of possible interconnect solutions to launch millimeter-wave signals into the transmission lines,
- Selection of possible fabrication techniques (milling, molding, additive manufacturing),
- Design of proof-of-concepts and experimental characterization.

With the support of our R&D teams, you may also interact tightly with various manufacturers to develop experimental prototypes. This research work will contribute to the development of computer-aided design tools for high-speed transmissions and interconnects at millimeter-waves for automotive applications.

Required competencies:

- Master by research / Engineering degree on microwaves (or millimeter waves) with a strong background on circuits and antenna theory. A good knowledge of electromagnetic commercial softwares (e.g. ANSYS Electromagnetics suite, CST) and of measurement techniques will be appreciated.
- Excellent capabilities in team work and communications,
- Strong adaptability,
- Proficiency in English.

To apply, send a detailed CV, a motivation letter and at least one recommendation letter to:

- APTIV: aurelie.kerveadou@aptiv.com and yves.stricot@aptiv.com,
- IETR: mauro.ettore@univ-rennes1.fr, david.gonzalez-ovejero@univ-rennes1.fr, and ronan.sauleau@univ-rennes1.fr