M1 EECS (Electrical Engineering and Control Systems)

High frequency electronics : introduction

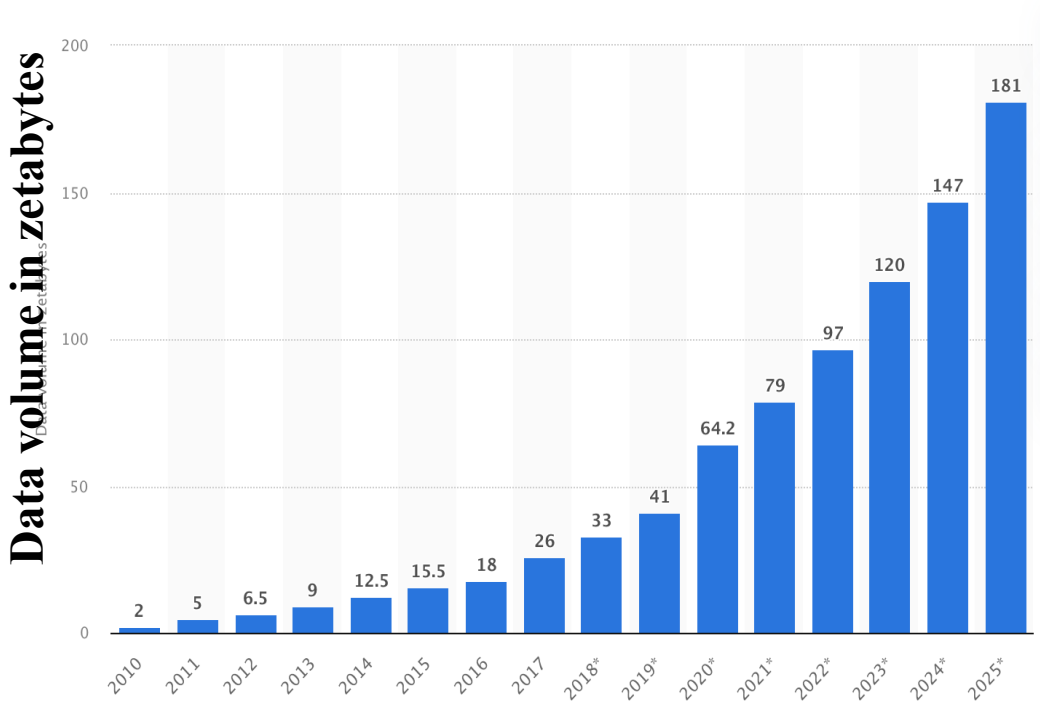
jean-marc.duchamp@univ-grenoble-alpes.fr

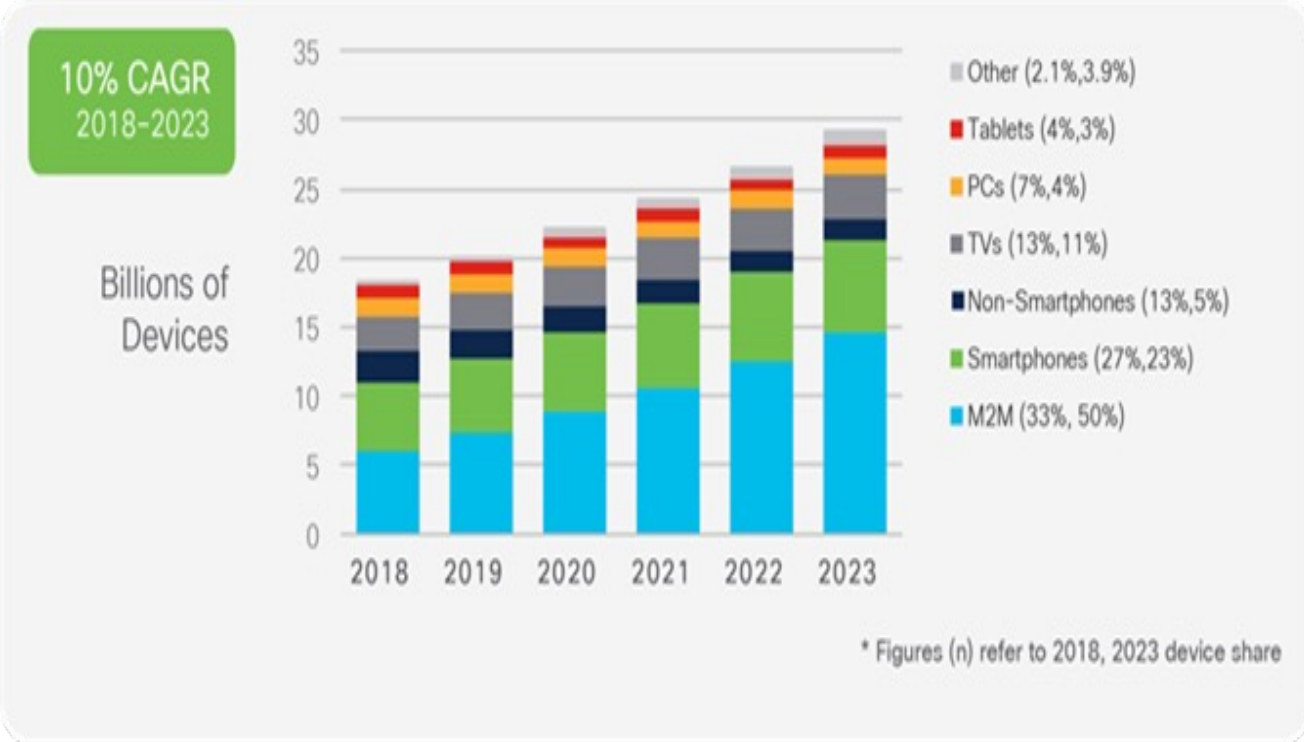
Jean-Marc DUCHAMP

2023-2024

Context : Why a RF passive component course ?

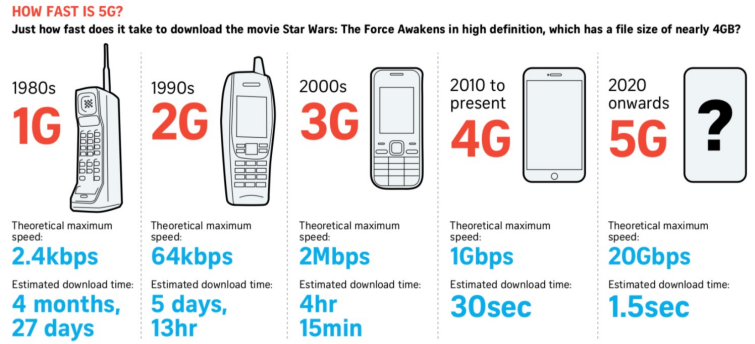
- World digital data exchange 2023 reaches 120 zetabytes (10^{21} bytes) (a byte is a letter) still growing up (double in 3 years)
- Main part of exchange are Wireless communication
  - IoT with 5G
  - Smartphone

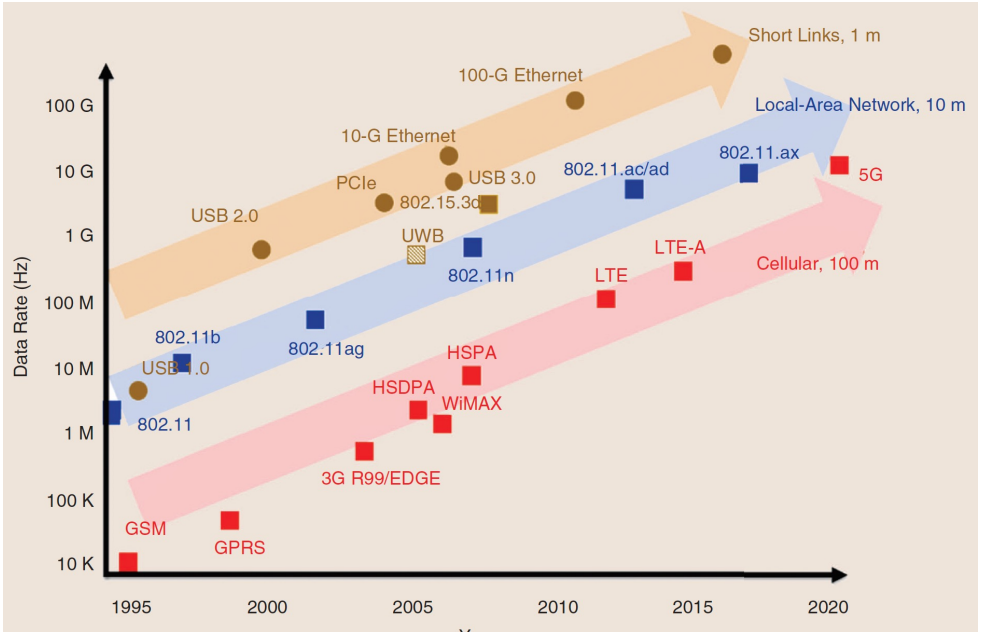


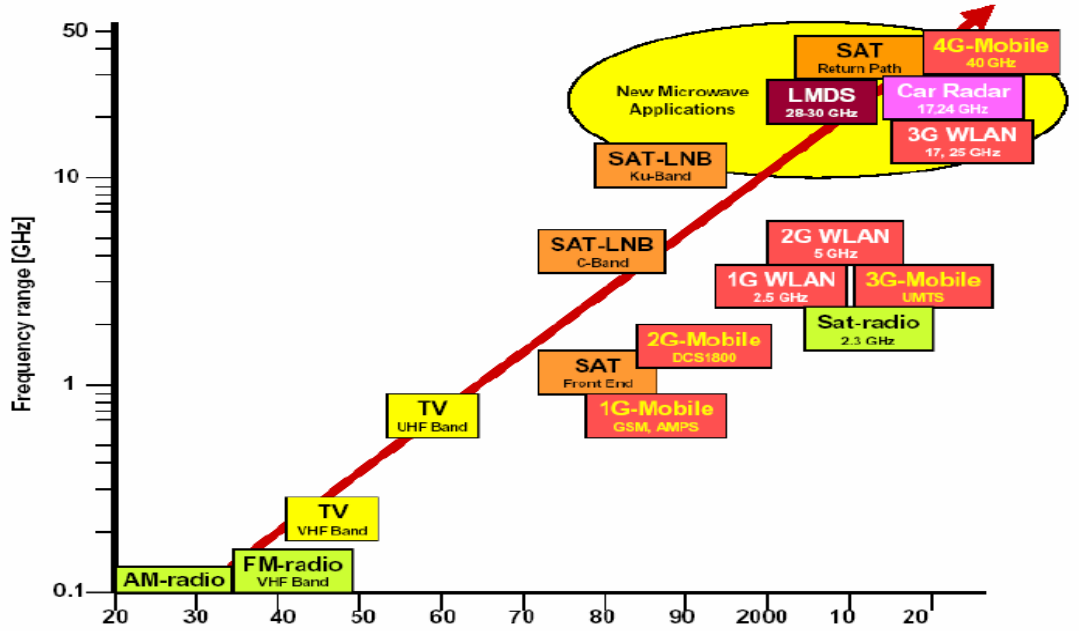


Context : Why a High frequency course ?

- Increasing data rate exchange means to use higher frequencies band
- Smartphone is the main use equipment for wireless data exchange







Course organisation

- Part1 : Introduction to microwave components
  -
- Part2 : S parameter & transmisson line