# Technological solutions for GaN based Radars

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GaN HEMT technology providing at the same time high power density, efficiency, low noise performance combined with the intrinsic material robustness, represents the best solution for the development of very compact and efficient Transmit Receive (TR) Module. For this reason, since 2005, Leonardo company started its experience on GaN technology, obtaining significant results in the development of dedicated chipset applied on Transmit Receive Modules (TRM) for C and X Band applications.
This progress has required the development and consolidation of both 0.5 and 0.25μm gate-length technologies, adopting a Gate Field Plate (FP) metallization for electric field control, and Source Field Plate (SFP) solution for RF Gain enhancement. The benefit obtained in terms of high performance - high reliability discrete device and passive components allowed the development of High Power Amplifier (HPA), Low Noise Amplifier (LNA) and Switches (SW) MMICs.