

5G – The Road Ahead

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Abstract

5G is the next proposed step in the evolution of wireless networks, providing an order of magnitude improvement in bandwidth delivered to the user device and enabling new vertical businesses for mobile operators. The ultra-broadband capability envisioned for 5G is based on both a move to higher frequencies (mmwave) and the evolution of MIMO in cellular bands.

Currently there are many field trials ongoing to test the 5G proposed architectures and validate the first wave of 5G specifications. As we move forward to implement there are many challenges to be overcome by the RF and microwave design community to make 5G a reality. Will breakthroughs in mmwave technology enable a whole new cellular infrastructure, or will we see a massive deployment of massive MIMO in sub 6GHz spectrum? In many ways, the future of 5G relies on us, the RF engineering community to deliver the advanced technology of tomorrow.

Let's take this journey into the future together. During this presentation we'll start by briefly discussing the 5G industry goals and motivations. Then we'll review the technologies that are in development today enabling the early 5G radio designs and we'll highlight some of the challenges that lay ahead for the RF design community including efficient radio circuits and architectures as well as integration and packaging.