

MVG mmWave OTA Test System Provides Proof of Concept for 5G Beamforming Solution

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For system level architects and industry test engineers, the availability of 5G has been long awaited, allowing more data to be transferred at faster speeds. Unlike previous generations of telecommunications standards, 5G NR mmWave uses dynamically steerable beams which maximise connectivity by directing as much of the signal directly to the device as possible. These steerable beams are created by phased array antennas and their associated electronics which need to be calibrated and measured in a large number of configurations through advanced Over the Air (OTA) tests to ensure the connectivity is optimized.

Taiwanese technology business TMYTEK has developed BBox, which stands for Beamformer Box. It is a development kit built for 5G NR mmWave antenna designers and protocol/algorithm developers, it saves time for research groups and product developers who would otherwise need to build up complex circuit systems to achieve the same result.

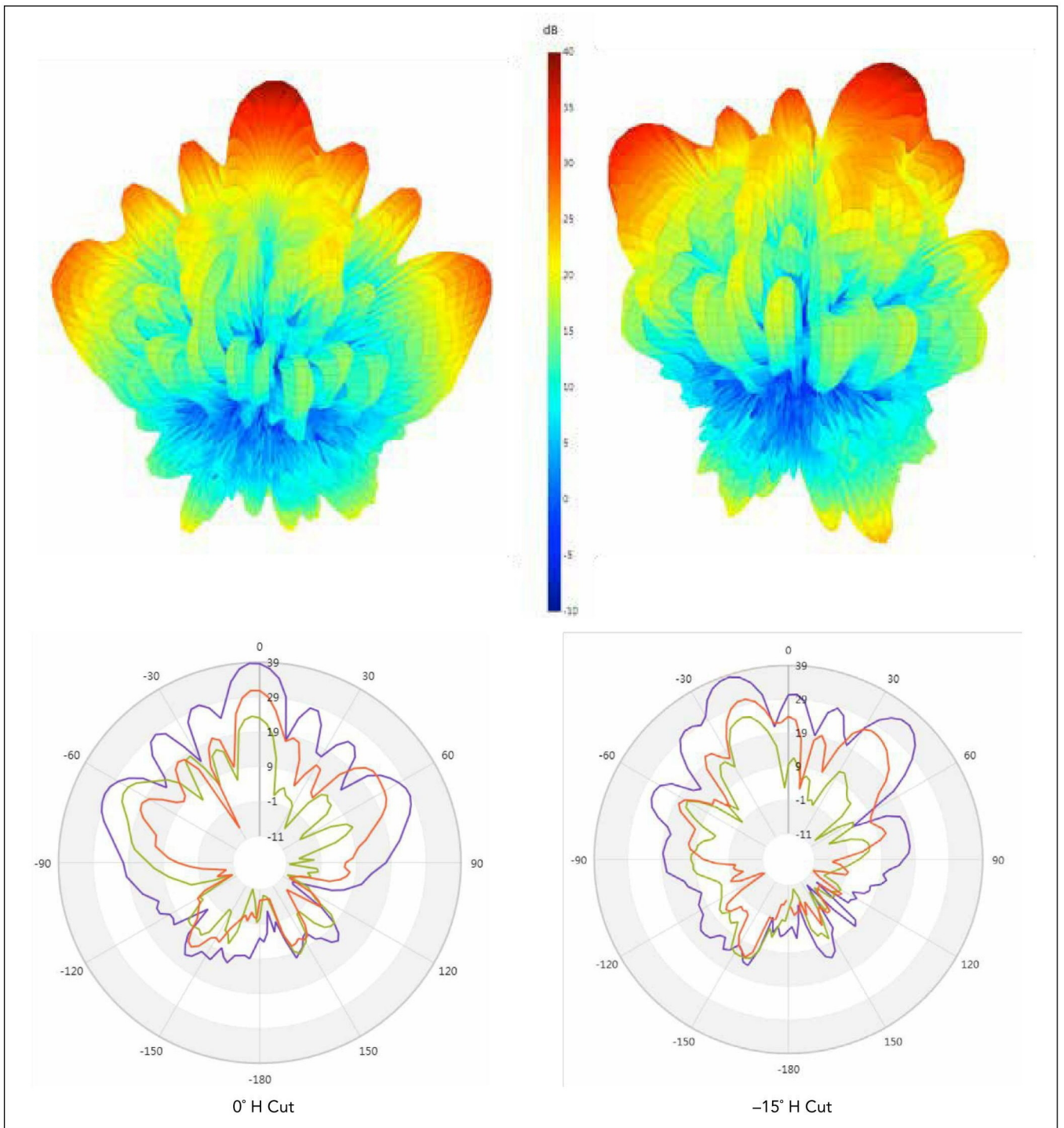
Following a six-month development process that included various testing at academic institutes around the world, Ethan Lin, Vice President at TMYTEK and project lead, was introduced to the Microwave Vision Group's (MVG) StarLab 50 GHz test system by Dr. Sidina Wane, CEO & Founder of eV-Technologies (see **Figure 1**).

Dr. Wane discusses the importance of the technology and why he directed the team towards the StarLab 50 GHz testing solution: "BBox is set to be a highly valued asset for designers, 5G system-level architects and



▲ **Fig. 1** BBox being tested in StarLab 50 GHz.

industry test engineers, saving time and speeding up product development. Because of the crucial nature of its role in the development process we needed to ensure that it was as robust and effective as possible. Having worked with MVG on similar projects in the past I knew that through StarLab, TMYTEK could not only ensure highly credible results, but that they could be delivered in a timely and effective manner."



▲ Fig. 2 Radiation patterns for 0° and -15° on the horizontal polarization.