

M3FORCE: 5G mmWave RF Module Challenges and Solutions

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In the talk and demo, we would like to share our point of view about the challenges and our considerations on 5G mmWave RF module, M3FORCE. Also, we will introduce our solution of 5G mmWave RF module that would also be a solution for OAI operating in mmWave band.

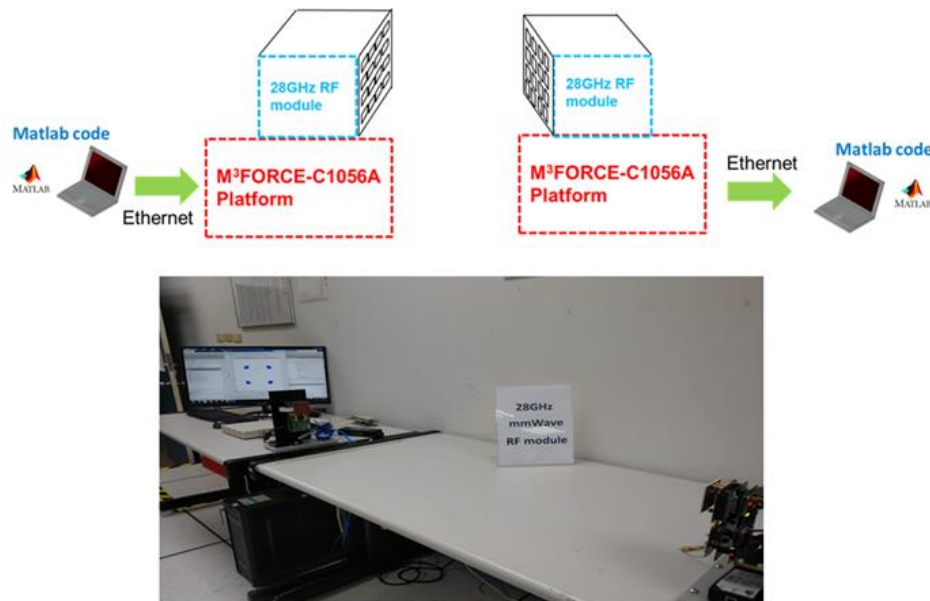


Fig. 1 M3FORCE: 28 GHz mmWave RF module setup

Our demo scenario is shown in Fig. 1. We will show our mmWave RF module that is connected to ITRI's developed software radio platform A. The Platform A will generate a packet which is consisted of a lot of OFDM symbols from matlab and transmit this packet once to the other platform B. The platform B will decode this packet to show the performance of this packet and transmit a ACK signal to inform platform A to generate another packet and transmit and so on.

This ITRI's developed software radio platform supports all software-based design with Matlab or C++. Also, the nFAPI interface is supported to easily connect with L2/L3 through it. This Platform not only supports the beam steering of mmWave phased antenna array, also maximum 8T8R bi-directional (both uplink and downlink) transmission.

In summary, we show a real OFDM transceiver by software through the mmWave RF module (28GHz band).