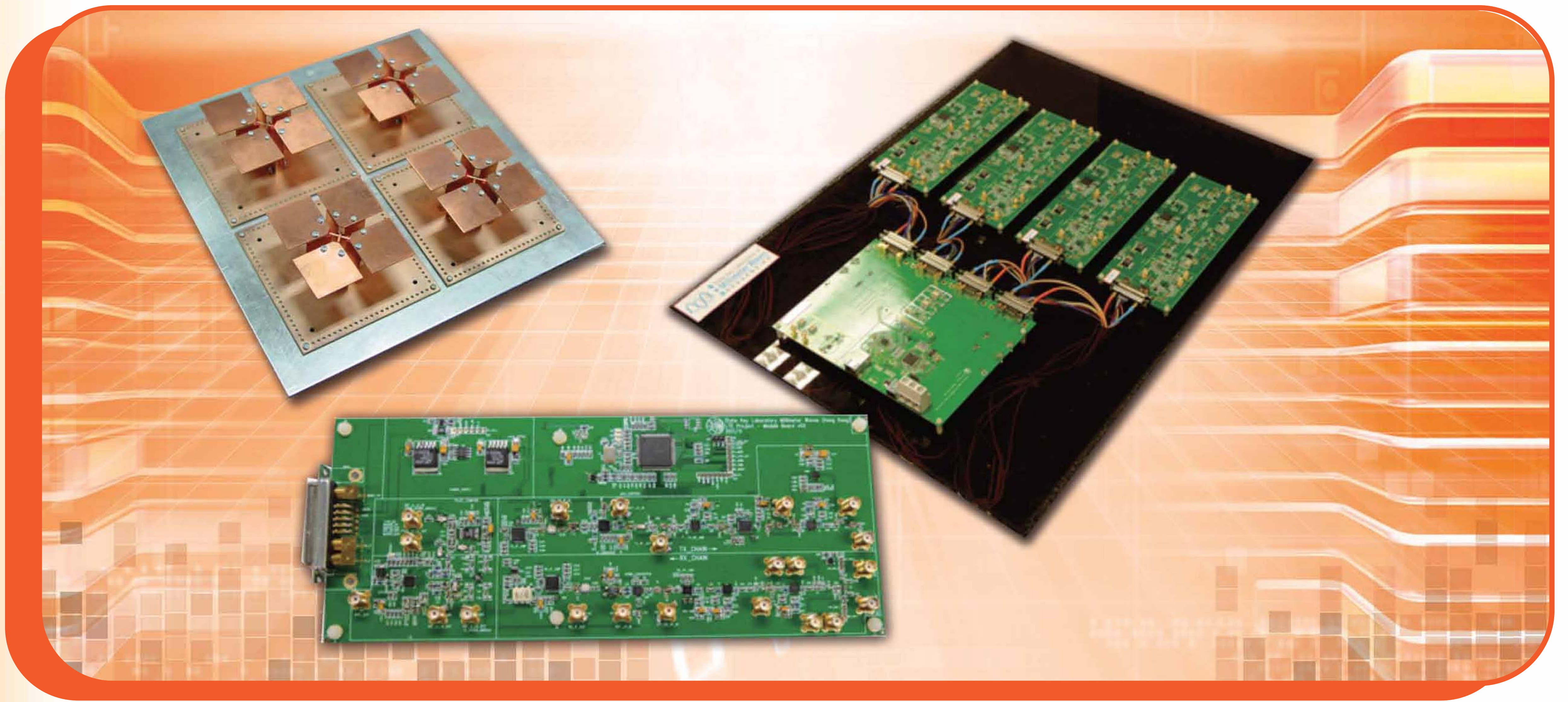


Reconfigurable Beam Steering Active Antennas for Broadband Communications

可重構波束的寬頻通訊有源天線



Abstract

In this project, we draw upon the expertise and facilities of CityU's State Key Laboratory of Millimeter Waves, Comba Telecom System (Guangzhou) Limited and Jackson Manufactory Dongguan Limited to collaborate on the development of an enabling technology in wideband adaptive radio frequency (RF) subsystem for wireless communications. Specifically, we will develop wideband antenna elements, high linearization technology for power amplifiers, and novel up-and down-conversion technologies with phased sources. The last two will be implemented in integrated circuits. All the technologies will be employed to design adaptive active antenna arrays for wireless communications.

Uniqueness and Competitive Advantages

- Array antenna with wideband antenna elements
- High linearization technology for power amplifiers
- Up-and down-conversion RF chains with low-cost phased sources (separate TX and RX tilts)
- The last two items mentioned above will be implemented in integrated circuits

Applications

- Active phase array
- Radar
- MIMO (Multi-input Multi-output)
- Point to multi-point communication

簡介

我們利用城大毫米波國家重點實驗室的專業技術和設施，與京信通信系統（廣州）有限公司及東莞積信製造有限公司合作，共同開發無線通訊用寬頻自適應射頻子系統。我們特別研發寬頻天線單元、高線性度的功率放大器及創新的相控源上下變頻技術，後兩者將用於集成電路的設計中，而所有技術將被用於無線通訊自適應有源天線陣列的設計。

特點及優勢

- 寬頻天線單元的陣列天線
- 可用於集成電路設計之高線性度的功率放大器的技術
- 可用於集成電路設計之低成本相控源的上下變頻射頻鏈（獨立的 TX 和 RX 波束）

應用

- 有源相控陣
- 雷達
- 多輸入輸出天線系統
- 點對多點通訊

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