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[\[無線網路\] 台灣之光！百倍速傳輸無線網路](#)

台灣之光！百倍速傳輸無線網路

台灣大學研究團隊發表全球最省電、最便宜、最快速的「超高速無線通訊系統晶片」，與2.4GHz的Wi-Fi無線網路一樣走60GHz不需執照的國際商用頻道，但其傳輸速度是WiFi的100倍、3.5G手機的350倍，市場潛力無限。

目前競相發展類似通訊系統晶片的單位還有IBM及柏克萊大學，但台大研究團隊所發表的超高速無線通訊系統晶片面積最小、功率消耗最低、成本最低，便於量產與應用於可攜式通訊產品，最具市場優勢。該通訊系統晶片使用90奈米製程，成功將所有電路置入晶片，且其改良式調變方式大幅降低功率消耗、簡化電路，使晶片所需面積縮減九成，是技術上最重大突破。

目前廣為使用的低波段頻寬太小且太擁擠，毫米波段將是下一代寬頻通訊應用的重點。60GHz有被大氣中的氧吸收的特性，傳遞過程不會干擾遠方的通訊，十分適合短距離高速的應用。目前柏克萊大學、IBM、日本NEC、富士通等研發單位或科技公司，都極力發展相關應用技術，但多針對特定局部範圍，台大的研究成果相較之下，是整合性非常高的成品。

Taida Presents the Most Economizing Wireless Communication System in the World

A research team from National Taiwan University, NTU, presents the most economizing wireless communication SOC (system on a chip) on energy, cost and time in the world. The system, like 2.4 GHz and Wi-Fi wireless internet, targets the 60 GHz spectrum, and this commercial spectrum requires no license while however performs a hundred times transmission efficiency than Wi-Fi, 350 times than 3.5 G cellphone. Its market potential is highly expected.

The contemporary competitors includes the research units in IBM and UC Berkeley, and yet the research team of Taida distinguished itself for its "super high speed wireless communication SOC" has the most minimized size, the lowest power consumption, the cheapest cost. Thus this system is rather quite ready for mass production and application to the portables; it obtains the advantage over the market. The communication system chip is realized in 90nm Process and has succeeded in minimizing all of the circuit on a chip, whose modified modulation scheme has greatly reduced the power dissipation, simplified the circuit, and minimized the size into ten percent of the normal size. This indicates a significant technical breakthrough.

The widely engaged low wave spectrums is too "small" and too "crowded." Millimeter wave will be the hotspot for the forthcoming generation of the wideband communication. 60GHz can be sustained by the oxygen in the air, and in the transmission it does not interfere with other distant communication. Therefore this frequency is very purposive for near and high speed adaption. Currently UC Berkeley, IBM, NEC in Japan, Fujitsu are paying much effort on the relevant applicable techniques. However most of them focus on particular concerns. On the contrary, the research result of Taiwan University is highly integrated.

深入資料：

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http://mag.udn.com/mag/digital/storypage.jsp?f_MAIN_ID=320&f_SUB_ID=2943&f_ART_ID=157823

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