

CSIRO designs world's best mm-wave chips for communications and security

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Millimetre-wave chip design is a highly specialised area – and recent work at CSIRO has reinforced its world-leading position in a field where a few microns can mean the difference between success and failure.

Dr Jay Guo, Research Director of the CSIRO ICT Centre's Wireless Technologies Laboratory says that they have recently developed the world's best millimetre-wave chips, operating at 200GHz.

“These chips are suitable for wireless communication links with up to tens of gigabits per second capacity,” says Dr Guo.

“Communications at these frequencies would be highly directional and would be more robust than optical links in cloudy, foggy or smoky conditions.”

“Another application of the chips is security imaging to detect concealed objects. Because the chips operate in the 180-220 GHz frequency range, the imager can have higher resolution, longer stand-off distance, and detect anything that blocks the body's natural heat radiation.”

“This means that people can be scanned from a distance, for instance as they pass through airport security screening stations.”

These chips offer the possibility of mm-wave receiver systems with much wider and higher frequency coverage than is currently possible. The new chips show higher yield and significantly lower loss than any

currently available on the market.

“CSIRO is currently seeking commercial partners to take these advanced chip designs to market,” says Dr Guo.

Source: CSIRO

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