Abstracts

Millimetre Wave Phase Locked Oscillator for Mobile Communication Systems

I. Telliez, M. Camiade, P. Savary and P. Bourne-Yaonaba. "Millimetre Wave Phase Locked Oscillator for Mobile Communication Systems." 1995 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 95.1 (1995 [MCS]): 49-52.

A 56.8GHz phase locked oscillator has been developed for broadband pico-cell networks in the 62 to 63 and 65 to 66 GHz bands. A set of millimetre wave MMICS has been produced using a 0.25µm HEMT low noise process. A 10 MHz reference is used to stabilise the loop with the help of a low frequency synthesiser at 200 MHz and a sampler at 14.2 GHz. Within the temperature range 0 to 50°C, the output signals delivered at 56.8 GHz are higher than the specified 6.5 dBm + 1.5 dB. The phase noise is better than -100 dBc/Hz at 1 MHz from carrier and lower than -70 dBc/Hz at 10 kHz from carrier. A 9 mm^2 multifunction chip incorporating three basic functions at 56.8 GHz has been implemented. This approach avoids critical connections and demonstrates the capability and maturity of our monolithic technology.

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