Abstracts

Millimeter-wave network analyzers based on photonic techniques

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We report on active photonic probes which enable on-wafer measurements of electrical scattering parameters with a bandwidth exceeding 300 GHz. The probes employ a high-speed uni-traveling-carrier photodiode to optically generate the electrical stimulus and the electro-optic sampling technique to measure the electrical response signals. The probe modules are packaged using micro-optic technology and exhibit excellent optical characteristics. They are easy to use and enable reliable and reproducible measurements and should help to overcome the bandwidth-limitation of present all-electronic systems.

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