

# Abstracts

## A compact LTCC Ku-band transmitter module with integrated filter for satellite communication applications

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*C.-H. Lee, A. Sutono, S. Han and J. Laskar. "A compact LTCC Ku-band transmitter module with integrated filter for satellite communication applications." 2001 MTT-S International Microwave Symposium Digest 01.2 (2001 Vol. II [MWSYM]): 945-948 vol.2.*

We present the first demonstration of an ultra compact low temperature co-fired ceramic (LTCC) based transmitter module using commercial GaAs MESFET MMICs for Ku-band satellite communication applications. The upconverter MMIC integrated with a VCO exhibits a measured up-conversion gain of 9 dB and an IIP3 of 17 dBm, while the power amplifier (PA) MMIC shows a measured total gain of 31 dB and a 1 dB compression output power of 26.5 dBm at 14 GHz. Both MMICs were integrated on a compact LTCC module where an integrated front-end band pass filter (BPF) with a measured insertion loss of 1.8 dB at 14.5 GHz was integrated. This transmitter module has a compact size of 400/spl times/310/spl times/35.2 mil/sup 3/.

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