Abstracts

Low cost Ka band transmitter modules for LMDS equipment mass production

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Two different Ka band medium power transmitters for LMDS (Local Multipoint Distribution System) applications have been designed proving successful performance while introducing low cost components and simple mounting techniques for industrial purposes. Commercially available BGA and LM packaged components are attached with epoxy dispensing procedures to a 0.254 mm height cost effective plastic substrate. The output power stages are die form MMIC amplifiers which are first mounted on separate carriers. A novel epoxy-on-bonding die attaching technique is used in order to prevent undesired bonding to plastic quality and performance. New active biasing networks are employed so that no later adjustment is necessary to control the overall transmitter behaviour. Active biasing also allows higher PAE than usual resistor dividers for gate biasing while preserving linearity and P1 dB output power. The transmitter modules work at 31.15 GHz and 25.7 GHz respectively. The measured P1 dB was 26.5 dBm and PAE at P1 dB was 16%.

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