

## LDS - A key to the 5G antenna

For the production of antennas in or on even the smallest electronic components, the requirements of the 5G generation can be a major challenge. The aim is to achieve higher frequencies and higher data throughput. The Laser Direct Structuring (LDS) process developed and patented by LPKF is a key to this. It generates antennas for these high requirements quickly, easily and directly on three-dimensional plastic components of any shape. There is no need for cost-intensive and lossprone connectors.

The higher the frequency of an antenna, the finer its structures. Laser systems operate with high precision and are able to produce minimal structures with only 25 µm conductor path and insulation channel width. With antennas manufactured using the LDS method, the frequencies of 77 GHz required for 5G can be realized.

The quick processing of 3D-MIDs with LDS is very economical, especially compared to other methods. This is particularly interesting for the mobile phone industry, which no longer uses aluminum housings in 5G generation smartphones due to the necessary frequencies. As a result, plastic is becoming the focus of technological attention - and with it the LDS process. The 5G technology is not only important for use in smartphones: 5G is always used where high data rates are required, e.g. for autonomous driving or in industrial 4.0 applications.

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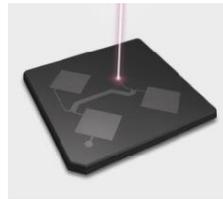
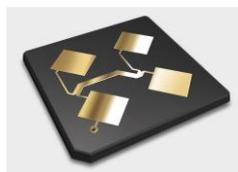
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**Fig:** Antenna structures on LDS-capable epoxy mold compound.

Fair reference: **smtconnect**

Interested visitors can find out more about the application possibilities and capabilities of LDS at SMTconnect in Nuremberg from 7 to 9 May at LPKF in Hall 5, Stand 434B.

**About LPKF**

LPKF Laser & Electronics AG manufactures machines and laser systems used in electronics fabrication, medical technology, the automotive sector, and the production of solar cells. Around 20 percent of the workforce is engaged in research and development.