



1 *The power amplifiers and integrated circuits of Fraunhofer IAF increase the energy efficiency in mobile communication and enable novel data links for highest data rates.*

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2 *Gallium nitride power transistor in package.*

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## POWER AMPLIFIERS FOR 5G MOBILE COMMUNICATION

In order to improve the energy efficiency of wireless telecommunication networks of the 5th generation and to enable unimagined data rates, Fraunhofer IAF develops customer specific amplifier modules. The use of gallium nitride power transistors and integrated circuits enable power amplifiers with high bandwidth, output power and efficiency in the frequency range up to 50 GHz at the same time. This allows for the achievement of best high-frequency data while keeping operating costs and energy consumption low.

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### Features

- Gallium nitride power transistors
- Compact solid-state power amplifier module
- Bandwidth 0.5 GHz – 2.8 GHz or 3.8 GHz
- Output power level 20 – 300 W
- Efficiency >55 %
- Gain >10 dB over the full bandwidth

### Applications

- Cellular base stations
- Pico-cells and macro BTS
- 4.5 G LTE, 5G, WiFi
- Multi-band amplifiers 0.5 – 6 GHz
- Data links in the Ku-Band (12 – 18 GHz), Ka-Band (26 – 40 GHz) and Q-Band (33 – 50 GHz) based on GaN MMICs