



1 Radio link systems improve the transport of increasing data rates in future industrial processes.

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2 Receiver circuit fabricated in the Fraunhofer IAF 35 nm technology.

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## RADIO LINK SYSTEMS: DATA TRANSPORT FOR INDUSTRY 4.0

The use of the frequency range between 60 and 330 GHz does not only make the transmission of large amounts of data possible, but also results in a very compact technical design. Thanks to the semiconductor technology developed at Fraunhofer IAF based on transistors with a high electron mobility (HEMT), it is possible to use this high frequency range through compact integrated circuits in active transmitters and receivers. Currently, Fraunhofer IAF develops adaptive wireless point-to-point terahertz communication systems for interiors.

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### Features

- Multifunctional chips: Integration of mixer, amplifier and antenna
- Monolithic integrated circuits (MMICs)
- Use of the frequency range between 60 and 330 GHz
- Data rates of up to 64 Gbit/s at 300 GHz

### Applications

- Industry 4.0: Transport of high data rates for automated fabrication processes
- Broadband access for rural areas
- Last-mile access
- Bit-transparent wireless-wired interface
- Cost-efficient and flexible bridging of obstacles in urban areas