

## LTE - Long Term Evolution

The term LTE (Long Term Evolution) designates a further development of existing mobile communication technology. With a **data transfer rate up to 300 Mbps**, LTE offers higher data rates than its predecessors GSM or UMTS.

LTE is specially suited for wireless broadband applications. Particularly rural areas and also previously undersupplied areas should benefit from LTE.

Currently, the successor technology LTE Advanced (4G technology) is being standardized. It is supposed to achieve even higher data rates of up to 1 Gbps.

Source: Federal Network Agency → [LTE](http://emf2.bundesnetzagentur.de/en_tech_lte.html) | [http://emf2.bundesnetzagentur.de/en\\_tech\\_lte.html](http://emf2.bundesnetzagentur.de/en_tech_lte.html)

Delock offers a selection of different antennas for **optimal LTE reception**, both **indoors** and **outdoors**.

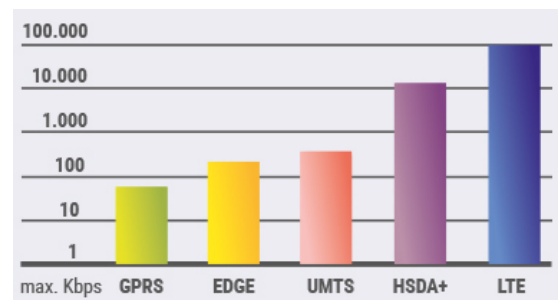
## Frequencies

LTE devices in Germany transmit and receive on the five common channels:

1920 - 2170 MHz -----> Channel 1  
 1710 - 1880 MHz -----> Channel 3  
 2500 - 2690 MHz -----> Channel 7  
 791 - 862 MHz -----> Channel 20  
 703 - 803 MHz -----> Channel 28

The lower the frequency, the fewer disturbance and the better the penetration of buildings, for example.

The frequencies of 700 MHz, used previously by DVB-T TV, were auctioned off in June 2015. These are intended to become available step-by-step for mobile communications by 2019. Through an increased data transfer capacity, **LTE increases the usage of the frequency resources**. LTE devices also work together with previous mobile standards, for example UMTS, without any problems.



Max. achievable bit rates of mobile communication standards

Already now Delock offers various LTE antennas, designed not only for the reception of the previous frequency ranges but also for the new frequencies.



**LTE / UMTS / GSM Antenna**  
RP-SMA, -0.9 ~ 2.3 dBi, omnidirectional, flexible joint



**LTE / UMTS / GSM Antenna**  
SMA, 1 ~ 4 dBi, omnidirectional, flexible joint



**LTE / UMTS / GSM Antenna**  
SMA, 2 dBi, omnidirectional, outdoor



**LTE / UMTS / GSM Antenna**  
N jack, 8 ~ 9 dBi, directional, outdoor



**LTE / UMTS / GSM Antenna**  
SMA, 1 ~ 4 dBi, direkcional, rotatable, flexible joint



**LTE / UMTS / GSM Antenna**  
SMA, -0,8 ~ 3 dBi, omnidirectional, flexible joint



**LTE / UMTS / GSM Antenna**  
N plug, 2.5 dBi, omnidirectional, outdoor

## MIMO technology - a multiple-antenna system

LTE uses the MIMO (Multiple-Input/Multiple-Output) transfer system. **Several transmission and reception antennas** lead to a higher transfer rate and make it possible to avoid disturbance during the reception. Greater distances can be bridged and the connection quality can be improved.

The current state of the art enables the connection of two antennas at the maximum. A suitable antenna base for this purpose is, for example, the **item 88739**:



**Antenna Base LTE MIMO**  
2 x SMA jack, 2 x SMA plug, low loss, cable length 1 m

In addition, Delock also offers LTE antennas which already **have included this technology**:

➤ Item 88931



**LTE MIMO Antenna Band 1/3/7/20**  
2 x N jack, 7 dBi, directional, outdoor

➤ Item 88476



**LTE MIMO Antenna Band 1/3/7/20**  
2 x SMA plug, 2 ~ 4 dBi, omnidirectional, outdoor



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