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## Research Dossier: Telekom Deutschland



### Country

Germany

### Company Name

Telekom Deutschland GmbH

### Ownership Type

Subsidiary

### Ownership/Controlling Entity

Deutsche Telekom

### Website

<https://www.telekom.de>

### MNC

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## Company Overview

Telekom Deutschland is the largest mobile network operating in Germany. The company operates as the mobile arm of its parent entity, Telekom Deutschland, which has its foundations as state-owned Deutsche Bundespost. The first German mobile network was launched by Deutsche Bundespost Telekom in 1985 based on analog (1G) technology under the C-Tel brand. To operate its mobile services division a subsidiary was created in 1992 known as DeTeMobil. The brand did not last long, with its name changed to T-Mobil in 1996 (and later T-Mobile in 2000) which remained until 2010 when the network became known simply as Telekom.

2G GSM services were launched in July 1992 over 900 MHz, and later introduced 1800 MHz. 3G UMTS services became active March 2006 over the B1 (2100 MHz) band, and later upgraded to HSPA+ in April 2010 and DC-HSPA+ in 2011.

Telekom's 4G LTE service began in April 2011 with a B20 (800 MHz) network, and very shortly after also on the B3 (1800 MHz) and B7 (2600 MHz) bands. A 300 Mbps LTE-Advanced network was implemented November 2014 using 2C CA\_3A-7A. 3C aggregation was trialled and achieved 375 Mbps by combining its 10 MHz B20 carrier (CA\_3A-7A-20A). LTE-A Pro was demonstrated in September 2016, achieving 1.2 Gbps using 5C aggregation and 4X4 MIMO. Further LTE carriers were rolled out during 2017 to improve capacity.

## Telekom IoT

NB-IoT was first launched NB-IoT on its Berlin network in October 2016 initially as a demonstration network, later expanded in March 2017 following the company's B8 (900 MHz) rollout. In November 2018 Deutsche Telekom announced its intention to deploy an eMTC LTE-M network in mid 2019 to support higher data rate IoT applications up to 1 Mbps. LTE-M testing has been conducted at labs in Berlin and Reutlingen throughout 2018.

## Telekom 5G

Achieving a European and arguably world first, in May 2018 Deutsche Telekom announced the rollout of 5G base station antennas on its live network. The network operates over the n77 (3700 MHz) band, using spectrum granted by the Bundesnetzagentur under a testing licence. Telekom Deutschland secured 90 MHz of 3.5 GHz spectrum during the national spectrum auction conducted in June 2019. The network officially transitioned to a full commercial spectrum licence in September 2019, with 5G data rates up to 1 Gbps available in Berlin, Bonn, Darmstadt, Cologne and Munich, where 129 5G antennas are transmitting.

### ▼ 3G UMTS Network Information

Details on UMTS network deployments are shown below. Data are often incomplete due to commercial nature. Consult dossier text for further details.

Launch Date 2006-03      Status      Active

#### **UMTS Band    Packet Data    Status**

[B1 \(2100 MHz\)](#)      [DC-HSPA+](#)      Active

### ▼ 4G LTE Network Information

Details on LTE network deployments are shown below. Data are often incomplete due to commercial nature. Consult dossier text for further details.

Evolution	<a href="#">LTE Advanced Pro (LTE-A Pro)</a>	Status	Active [Launched 2010-12]
Max. MIMO	<a href="#">4x4 MIMO</a>	Max. Modulation	<a href="#">256QAM</a>
Carrier Aggregation	<a href="#">CA_3A-7A (B3+B7)</a> <a href="#">CA_3A-20A (B3+B20)</a> <a href="#">CA_3A-3A-20A (B3+B3+B20)</a> <a href="#">CA_3C-7C (B3+B3+B7+B7)</a> <a href="#">CA_3A-7A-20A (B3+B7+B20)</a>	Features	<a href="#">VoLTE</a>

LTE Band	Channel Width	Status
<a href="#">B3 (1800 MHz)</a>	20 MHz	Active
<a href="#">B7 (2600 MHz)</a>	20 MHz	Active
<a href="#">B8 (900 MHz)</a>	5 MHz	Active
<a href="#">B20 (800 MHz)</a>	10 MHz	Active
<a href="#">B28 (700 MHz)</a>	10 MHz	Active
<a href="#">B32 (1500 MHz Suppl. DL)</a>	20 MHz	Active
<a href="#">B38 (2600 MHz)</a>	5 MHz	Active

### ▼ 5G NR Network Information

Details on 5G NR network deployments are shown below. Data are often incomplete due to commercial nature. Consult dossier text for further details.

Active [Launched 2018-

Type	<a href="#">NR (Standard)</a>	Status	05-03]
Max. MIMO	<a href="#">64T64R</a>	Max. Modulation	<a href="#">256QAM</a>
Carrier Aggregation	-	Features	-

<b>NR Band</b>	<b>Channel Width</b>	<b>Status</b>	
<a href="#">n77 (3700 MHz)</a>	90 MHz	Active	
▼ IoT Network - NB-IoT (LTE Cat-NB1)			
Technology	<a href="#">NB-IoT (LTE Cat-NB1)</a>	Status	Active
Band	<a href="#">B8 (900 MHz)</a>	Launch Date	2016-10
▼ IoT Network - eMTC (LTE Cat-M1)			
Technology	<a href="#">eMTC (LTE Cat-M1)</a>	Status	Trialling
Band	-	Launch Date	-

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