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Research Dossier: KT

Country

South Korea

Company Name

KT Corporation

Ownership Type

Publicly Traded Company

Website

https://corp.kt.com

MNC

02
04

Company Overview

KT Corporation (□□□ □□□□) is the Republic of Korea's largest telecommunications services provider. Formerly known as Korea Telecom, the state-owned incumbent telecommunications provider, the company was founded in September 1885. KT's modern structure was formed in 1981 as a public utility. Following a series of sell-offs and mergers throughout the 90s, privatisation began May 2001 and by 2002 Korea Telecom, now KT, was formally a publicly traded company. The company is listed on the KRX (030200), NYSE (KT), and LSX (KTCD) exchanges.

The company began its 2G GSM services in 1996 over the 1800 MHz band, and launched 3G UMTS over B1 (2100 MHz) in June 2006. 3G services were upgraded to HSPA+ in January 2012.

4G LTE was first launched under the Olleh LTE (□□ □□□) banner in January 2012 following the refarming and deactivation of 1800 MHz 2G GSM services. VoLTE was implemented later in October 2012 to improve voice capacity. By September 2013 LTE bandwidth was extended to 20 MHz, permitting data rates up to 150 Mbps following the company securing additional spectrum in an August 2013 auction. Shortly after, KT introduced a B8 (900 MHz) carrier, implementing LTE-A 2C aggregation (CA_3A-8A) to provide higher peak data rates.

LTE-A was extended further in January 2015 with the addition of 10 MHz B1 (2100 MHz), providing 3C aggregation (300 Mbps peak data rates). In June 2015 announced its intention to deploy a "GIGA-LTE" network, comprising 3C aggregation and LTE-U LAA to provide peak data rates of 1.17 Gbps.

KT IoT

The company was an early adopter of the NB-IoT standard, demonstrating the technology in September 2016. The network was activated in April 2017, with national coverage achieved by July that year. The network, shared with LG U+, is understood to be using KT's B3 (1800 MHz) carrier. KT also provides an LTE-M network over its B3 (1800 MHz) network.

KT 5G

KT became an early leader in the development of 5G NR, announcing its development in March 2015 and releasing draft specifications of the technology in mid-2016. By October 2016 the company had made its first data call over 5G. February 2017 saw a full end-to-end service completed, and October 2017 network handoff had been implemented.

KT showed the world’s first successful “5G network demo-service” at the PyeongChand 2018 Winter Olympic Games. The network implemented 252 sites outfitted with TDD n257 (28 GHz), Massive MIMO, hybrid-beamforming, and using intra-band 8CA of 100 MHz carriers (n257M).

South Korea held a 5G spectrum auction in March 2018, offering 300 MHz in the 3.5 GHz band, and 1 GHz in the 28 GHz mmWave band. KT secured 3500 to 3600 MHz, and the 26.5 to 27.3 GHz blocks.

Live network testing has been conducted in partnership with Samsung, most notably in March 2019 when KT achieved 1 Gbps over its n78 (3500 MHz) 5G network with a Samsung Galaxy S10. KT launched its 5G mobile network alongside competitors in April 2019, using a 100 MHz carrier in the n78 (3500 MHz) band.

▼ 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	2006-06	Status	Active

UMTS Band	Packet Data	Status	
B1 (2100 MHz)	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	LTE Advanced Pro (LTE-A Pro)	Status	Active [Launched 2012-01]
Max. MIMO	4x4 MIMO	Max. Modulation	256QAM
Carrier Aggregation	CA_1A-3A (B1+B3) CA_1A-8A (B1+B8) CA_3A-8A (B3+B8) CA_1A-3A-8A (B1+B3+B8)	Features	LTE-M LTE-U VoLTE

LTE Band	Channel Width	Status	
B1 (2100 MHz)	10 MHz	Active	
B3 (1800 MHz)	20 MHz	Active	
B8 (900 MHz)	10 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.

Type	NR (Standard)	Status	Active [Launched 2019-04-03]
Max. MIMO	Massive MIMO	Max. Modulation	256QAM
Carrier Aggregation	-	Features	-

NR Band	Channel Width	Status	
n78 (3500 MHz)	100 MHz	Active	
n257 (28 GHz)	400 MHz	Trialling	

Services Available

Field Technical Services

As specialists in 3G, 4G, and 5G cellular technologies, our R-Spectrum team provides in-country technical services to most regions around the world. Operating on a contract basis we are often sent to remote and isolated regions to assist companies in establishing voice and data communications.

RF Coverage Modelling & Planning

Through our R-Spectrum team, we help our clients visualise and understand mobile signal issues by offering a range of radio frequency modelling services for 2G GSM, 3G UMTS, 4G LTE, and 5G NR cellular technologies. The first step to solving any problem is to understand the problem.

▼ IoT Network - NB-IoT (LTE Cat-NB1)

Technology	NB-IoT (LTE Cat-NB1)	Status	Active
Band	B3 (1800 MHz)	Launch Date	2017-04

▼ IoT Network - eMTC (LTE Cat-M1)

Technology	eMTC (LTE Cat-M1)	Status	Active
Band	B3 (1800 MHz)	Launch Date	2016-03

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