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Research Dossier: SK Telecom



Country

South Korea

Company Name

SK Telecom Co., Ltd.

Ownership Type

Publicly Traded Company

Website

<https://www.sktelecom.com>

MNC

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Company Overview

SK Telecom (SK텔레콤 or SK텔레콤) (Sunkyong Telecom) is a wireless telecommunications service provider in the Republic of Korea. The company began operations in 1984 as Korea Mobile Telecommunications Services Corp (한국 이동통신 서비스), initially as a subsidiary of state-owned Korea Telecom (KT) until privatisation in 1993. By 1994 SK Group (then Sunkyong Group) had acquired a majority shareholding. The company joined the SK Group in January 1997 and changed its name to SK Telecom in March of that year.

SK Telecom began operations providing 1G AMPS services, achieving national coverage by 1991, and launched 2G CDMA in October 1994. In October 2000 the company became the second in the world to launch a 3G W-CDMA network, using B1 (2100 MHz). The network was upgraded to HSPA+ in July 2010.

4G LTE was launched July 2011 over B5 (850 MHz), using a 10 MHz channel width. National coverage was achieved by April 2012, and by May had begun carrier aggregation trials to combine B5 and a new B3 carrier. The dual carrier network was implemented July 2012 - the first in the world to use two LTE bands. Following the 3GPP Rel. 10 launch, the company commercially activated LTE-Advanced using 2C aggregation of B3+B5. Following an August 2013 auction, SK Telecom secured an additional 20 MHz of 1800 MHz spectrum and increased B3 width to 20 MHz. LTE-A peak data rates were subsequently extended to 225 Mbps.

Mid 2014 saw the company begin B1 (2100 MHz) LTE, and by December SK Telecom announced 3C aggregation of B1+B3+B5.

In June 2014 the company conducted the world's fastest LTE CA, achieving 3.8 Gbps using 9 TDD carriers and 1 FDD carrier. Further CA trials conducted in December 2015 saw 428 Mbps DL achieved

using 3C TDD B41 (2500 MHz) with 256QAM modulation.

SK Telecom launched LTE-Advanced Pro in June 2016, supporting peak data rates of 500 Mbps using 3C aggregation and 256QAM modulation. By end of 2016 B7 (2600 MHz) was implemented, taking data rates to 525 Mbps. 4X4 MIMO and 4C aggregation was later implemented in 2017, taking data rates over the 900 Mbps mark by adding a further non-contiguous B7 channel. In June 2017 the company announced the launch of 5C aggregation, with the network for the first time exceeding 1 Gbps peak DL rates.

SK Telecom IoT

SK deployed both eMTC / LTE-M and LoRa networks, announcing their commercial activation in March and July 2016 respectively. eMTC (LTE-M) is implemented on the network's existing B3 and B5 carriers.

SK Telecom 5G

SK Telecom has conducted a number of 5G trials, beginning December 2016 in partnership with Ericsson and Qualcomm. The network trials have been conducted over n78 (3500 MHz) and n257 (28 GHz). Further trials were conducted in June and September 2017 with Nokia and Samsung. Infrastructure deployment began in December 2017, supporting data rates up to 20 Gbps. Working in partnership with Samsung, the company announced the completion of its first NR test bed call in October 2018.

SK Telecom officially launched its 5G network in April 2019, operating an initial 34,000 5G base stations across 85 cities nationwide. The company is understood to be using the 100 MHz of n78 (3500 MHz) spectrum it secured during June 2018 auctions.

▼ 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 2000-10 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 2011-07]

Max. MIMO [4x4 MIMO](#) Max. Modulation [256QAM](#)

Carrier Aggregation [CA_1A-3A \(B1+B3\)](#)
[CA_3A-5A \(B3+B5\)](#)
[CA_3A-7A \(B3+B7\)](#)
[CA_1A-3A-5A \(B1+B3+B5\)](#)
[CA_1A-3A-7A \(B1+B3+B7\)](#)
[CA_1A-3A-7A-7A \(B1+B3+B7+B7\)](#) Features [LTE-M](#)
[LTE-U](#)
[VoLTE](#)

LTE Band Channel Width Status

[B1 \(2100 MHz\)](#) 10 MHz Active
[B3 \(1800 MHz\)](#) 20 MHz Active
[B5 \(850 MHz\)](#) 10 MHz Active
[B7 \(2600 MHz\)](#) 20 MHz Active
[B7 \(2600 MHz\)](#) 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 | |
| ▼ IoT Network - eMTC (LTE Cat-M1) | | | |
| Technology | eMTC (LTE Cat-M1) | Status | Active |
| Band | B3 (1800 MHz) B5 (850 MHz) | Launch Date | 2016-03 |
| ▼ IoT Network - LoRa | | | |
| Technology | LoRa | Status | Active |
| Band | KR920-923 | Launch Date | 2016-07 |

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