

Parameters	1G	2G	3G	4G
Introduced in year	1983	1990	2000	2010
Location of first commercialization	USA	Finland	Japan	South Korea
Technology	AMPS (Advanced Mobile Phone System), NMT, TACS	IS-95, GSM	UMTS, HSPA	LTE-A, WiMAX 2
Multiple Address/Access system	FDMA	TDMA, CDMA	WCDMA	OFDMA
Switching type	Circuit switching	Circuit switching for Voice and Packet switching for Data	Packet switching + Circuit switching	Packet switching
Speed (data rates)	2.4 Kbps to 14.4 Kbps	14.4 Kbps	3.1 Mbps	> 300 Mbps
Special Characteristic	First wireless communication	Digital version of 1G technology	Digital broadband, speed increments	Very high speeds, All IP
Features	Voice only	Multiple users on single channel	Multimedia features, Video Call	High Speed, real time streaming
Supports	Voice only	Voice and Data	Voice and Data	Voice and Data
Internet service	No internet	Narrowband	Broadband	Ultra Broadband
Bandwidth	25, 30 KHz	200 KHz	5 - 25 MHz	100 MHz
Operating frequencies	800 MHz	GSM: 900 MHz, 1800 MHz; CDMA: 800 MHz	1.6 - 2.1 GHz	2 - 8 GHz
Band (Frequency) type	Narrow band	Narrow band	Wide band	Ultra Wide Band
Advantage	Simpler (less complex) network elements	Multimedia features (SMS, MMS), Internet access and SIM introduced	High security, International roaming	Speed, High speed handoffs, MIMO technology, Global mobility

Disadvantages	Limited capacity, not secure, poor battery life, large phone size, background interference	Low network range, slow data rates	High power consumption, Low network coverage, High cost of spectrum licence	Hard to implement, complicated hardware required
Applications	Voice Calls	Voice calls, Short messages, browsing (partial)	Video conferencing, mobile TV, GPS	High speed applications, mobile TV, Wearable devices