

Technology	Frequency band	Datarate/bandwidth	Range (typical)	Output power (typical)	Suitable applications
2G - GSM	GSM 900 890 - 915 MHz 935 - 960 MHz GSM 1800 1.710 - 1.785 GHz 1.805 - 1.880 GHz	GPRS 53.6 kbps download 13.4 (26.8) kbps upload EDGE 236.8 kbps download 118.4 (236.8) kbps upload	Up to 35 km (line of sight) depending on frequency band and output power	Up to 2 W	Speech and data, M2M and IoT
3G - UMTS	1.920 - 1.980 GHz 2.110 - 2.170 GHz	UMTS 384 kbps download 128 (384) kbps upload HSPA 1.8/3.6/7.2 Mbps download 1.8/3.6/5.8 Mbps upload HSPA+ 14.4/21.1/42.2 Mbps download 5.8 (11.5) Mbps upload	3 km depending on frequency band and output power	125 mW, up to 250 mW	M2M, remote control, tracking
4G - LTE	Main European bands: B20 - 800 MHz: 791 - 821 MHz 832 - 862 MHz B3 - 1800 MHz 1.805 - 1.880 GHz 1.710 - 1.785 GHz B7 - 2600 MHz: 2.620 - 2.690 GHz 2.500 - 2.570 GHz	LTE Up to 100 Mbps download Up to 50 Mbps upload LTE Advanced Up to 1 Gbps	3 - 5 km depending on frequency band and output power	200 mW	M2M, tracking, monitoring systems, video
Bluetooth Classic USB/BT3.0	2.4 GHz	Middle to high	Up to 100 m (Class 1)	Class 1 - 100 mW Class 2 - 2.5 mW Class 3 - 1 mW	Speech and data
Bluetooth® LE/Smart/BT4.1	2.4 GHz	Low to middle	10 m	1 - 10 mW	M2M, IoT, sensors
WLAN IEEE 802.11 b/g	2.4 GHz	802.11b 5.5/11 Mbps 802.11g Up to 54 Mbps	Up to 100 m	100 mW	Speech and data
WLAN IEEE 802.11n	2.4 GHz 5 GHz	Up to 72.2 Mbps (20 MHz channel) Up to 150 Mbps (40 MHz channel) Up to 600 Mbps (4x4-MIMO)	Up to 100 m	2.4 GHz band: 100 mW 5 GHz band: Up to 200 mW (channel 36 - 64) Up to 1000 mW (channel 100 -140)	Speech, video and data
802.15.4	868 MHz (Europe) 915 MHz (North America) 2.4 GHz (channel)	20 kbps (sub GHz) 250 kbps (2.4 GHz) Low to middle	Up to 100 m	1 - 20 mW	Standard-based IoT and M2M, industrial control, ZigBee possible
Sub 1GHz proprietary	169 MHz 315 MHz, 915 MHz (North America) 433 MHz, 868 MHz (Europe)	Low to middle	Up to 100 m	1 - 10 mW	Proprietary IoT, M2M, industrial control
2.4GHz proprietary	2.4 GHz	Low to middle	Up to 100 m	1 - 100 mW	Proprietary IoT, M2M, industrial control
SIGFOX	868 MHz (Europe) 915 MHz (North America)	Very low Up to 100 bps	Up to >10 km	Up to 14 dBm	M2M, IoT, sensors

Need help choosing a suitable wireless technology?

Contact one of our technical experts and find out more about our range of wireless and M2M solutions at www.acalbfi.com

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