





**LIFE IS FOR SHARING.**

	<b>LTE-Cat1<sup>1</sup></b>	<b>LTE-M</b>	<b>NBIoT</b>	<b>LoRa</b>	<b>Sigfox</b>
Spectrum	Licensed	Licensed	Licensed	Unlicensed	Unlicensed
Bandwidth	20 MHz	1,4 MHz	180 kHz	125-500 kHz	200 kHz
Bidirectional Data Transfer	Full duplex	Half duplex	Half duplex	Half duplex	Half duplex
Peak Data Rate	10 Mbps (DL) 5 Mbps (UL)	& full duplex	250 kbps (DL) 230 kbps (UL)	50 kbps (DL) 50 kbps (UL)	0,6 kbps (DL) 0,1 kbps (UL)
Typical Downlink Daily Throughput	Limited only by battery power, radio signaling condition and commercial terms (e.g. monthly data volume, amount of messages/size per period)			~200B	24B
Typical Uplink Daily Throughput				~200kB	1,64kB
Max. Path Loss (vs. GSM)	144 dB (0 dB)	156 dB (+ 12 dB)	164 dB (+ 20 dB)	157 dB (+ 13 dB)	153 dB (+ 9 dB)
Expected Module Cost	>10\$	<10\$	<5\$	<7\$	<3\$
Expected Max. Battery Lifetime <sup>1</sup>	3-5 years	5-10 years	10+ years	10+ years	10+ years

1. Values relate to LTE-Cat 1 category.