Cellular Connectivity for IoT Comparison Chart

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	NB-IoT (Cat NB2)	LTE-M (Cat M1)	LTE Cat 1
Bandwidth	180 kHz	1.4 MHz.	20 MHz
Downlink Peak	27 kbit/s	588 Kbit/s	10 Mbit/s
Uplink Peak	159 kbit/s	1.2 Mbit/s	5 Mbit/s
Real World Speeds	10s of Kbit/s	~200 kbit/s	Commonly a few Mbit/s DL and sub-5 Mbit/s UL in live networks.
Latency	1.6–10 s	10–15 ms - 10 ms (in most cases)	50–100 ms
Coverage / Penetration	Great coverage and penetration; up to 164 dB MCL using CE	Great coverage and penetration; up to 160.7 dB MCL using CE	Good coverage where LTE is deployed; no extra coverage-enhancement gain vs standard LTE but benefits from mature global LTE footprints.
Duplex	Half	Half	Full
Antenna	1	1	2 Cat 1-bis allows for single Rx/single antenna.
Global availability	Good availability, the only cellular LPWA technology available in China. Requires new, dedicated infrastructure.	Great availability where LTE already exists. Built on existing LTE technology. Not available in China.	800+ LTE networks in over 200 countries, over 5 Billion subs
Roaming capability	Technically possible Check regions of interest.	Good roaming availability. Check regions of interest.	Mature global roaming on LTE, often via multi-IMSI or global IoT SIM offers.
Module costs (100k+ volumes)	~$4–5	~$8–10	~$15-20
Power-saving features	PSM and eDRX	PSM and eDRX	PSM and eDRX; availability depends on network/operator implementation.
Mobility	No handover during movement; best for static devices.	Connected-mode mobility with handover; suitable for static and mobile assets.	Full LTE mobility and handover; designed for moving devices such as trackers and telematics units.
Voice support	No voice support.	No, most MNO haven't deployed support on LTE-M	Yes, VoLTE

This chart compares NB-IoT, LTE-M, LTE-Cat1 based on publicly available information. It is for reference only, does not guarantee performance, and is subject to change as standards and implementations evolve. Data shown is sourced from manufacturers' published datasheets and may vary from actual performance. For the most current information, please refer to the official websites of the referenced companies.
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