Siretta
Enabling Industrial IoT

What do you need to know about LTE/5G Band Coverage?

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4G LTE and 5G NR cellular have many different bands of operation compared with 2G GSM and 3G UMTS cellular systems. To add to the complexity, NBIoT uses a subset of the available LTE frequency bands. This can be confusing.

So, to help the user make sense of all these bands and what the antenna is capable of, Siretta's new datasheets summarise this information into a table that includes the measured performance of the antenna on all the different bands, together with a traffic light system to show the antennas suitability at any band of interest.

LTE/5G Table

LTE, CAT-M/5G Bands	NB-IoT Band	Regional Coverage	Uplink	Downlink	Avg Efficieny % over band	Max VSWR over Band
1/n1	B1	Europe / Asia	1920-1980 MHz	2110-2170 MHz	70.81 / 67.15	1.78 / 1.60
2/n2	B2	North America/Latin America/Caribbean	1850-1910 MHz	1930-1990 MHz	67.85 / 71.04	1.91 / 1.78
3/n3	B3	Europe/Africa/Asia/Oceania	1710-1785 MHz	1805-1880 MHz	58.79 / 64.36	2.07 / 1.91
4	B4	North America/Latin America/Caribbean	1710-1755 MHz	2110-2155 MHz	57.94 / 67.04	2.07 / 1.59
5/n5	B5	Country Specific	824-849 MHz	869-894 MHz	52.51 / 47.71	2.13 / 2.47
7/n7		Latin America/Europe/Asia +	2500-2570 MHz	2620-2690 MHz	45.47 / 45.39	2.71 / 2.66

So what do the LTE/5G Band Coverages actually mean?

LTE, CAT-M/5G Bands: LTE band is the band number. 5G NR bands are prefixed with 'n' as specified by the 3GPP Standards body. Where 5G NR overlaps with 4G LTE, they use the same band number.

NB-IoT Band: Although NB-IoT is part of the LTE specification, it does not use all the bands used by LTE. Those used are listed in the new datasheets.

Regional Coverage: This shows where the bands are typically used. However, many are country specific rather than used through a region. The user is advised that this is a general statement and that band use in specific countries (and specific networks) be checked before use.

Uplink: The range of frequencies used for the uplink part of the band.

Downlink: The range of frequencies used by the downlink part of the band.

Average Efficiency % over band: The values provided here are taken from the Radiation Efficiency plot and are the average values for the uplink and downlink respectively. A traffic light system gives a visual indication of how Siretta perceives the antennas suitability for that band of operation, taking into account the Average Efficiency and VSWR