Emission Information

In our research project, we are using an equipment that is a nano-cell LTE base station manufactured by *ip.access* (Model: nanoLTE E40). This base-station follows standards and specifications identified by 3GPP for LTE communication.

This base station supports the following frequency bands:

E-UTRA Operating Band	Uplink (UL) operating band BS receive UE transmit	Downlink (DL) operating band BS transmit UE receive	Duplex Mode
	F_{UL_low} – F_{UL_high}	F_{DL_low} – F_{DL_high}	
1	1920 MHz – 1980 MHz	2110 MHz – 2170 MHz	FDD
3	1710 MHz – 1785 MHz	1805 MHz – 1880 MHz	FDD
7	2500 MHz – 2570 MHz	2620 MHz – 2690 MHz	FDD
20	832 MHz – 862 MHz	791 MHz – 821 MHz	

For each of the 4 frequency bands above, the emission characteristics are the same, and are as described below:

1. Necessary bandwidth: 10 MHz. This is computed based on 15KHz sub-carriers LTE uses to carry digital information. The necessary bandwidth includes 1MHz guardband.
2. Type of modulation: W. LTE uses QAM modulation that is both an amplitude and phase modulation scheme.
3. Nature of signal modulating the main carrier: 7. LTE uses several 15KHz subcarriers to carry digital information.
4. Type of information: D. LTE provides a data bearer.
5. Emission Designator: 10M0W7D