Technical Note on Antenna Gain and Power calculations

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dBi is the amount of focus applied by an antenna with respect to an "Isotropic Radiator" (a dispersion pattern that radiates the energy equally in all directions onto an imaginary sphere surrounding a point source). Thus an antenna with 2.1 dBi of gain focuses the energy so that some areas on an imaginary sphere surrounding the antenna will have 2.1 dB more signal strength than the strength of the strongest spot on the sphere around an Isotropic Radiator. This is why it is also sometimes referred to as 'peak' gain.

Antenna gain is always understood to be the gain of the antenna relative to an isotropic antenna unless otherwise stated.

Since the gain of an idea isotropic antenna is 1, the units of dBi and dB are interchangeable for the purposes of the power calculations.

If the antenna has a specified gain of 10 dBi, then the gain of the antenna is 10 dBi = 10dB. **Therefore, it is common practice to state the antenna gain as dB instead of dBi.**

The data sheet for the PA25-1615-025SA antenna states the Gain as dB and it is therefore understood to be dBi. This is further reflected in the fact that the rest of the data sheet mentions gains for the antennas in dBi.
