

How to calculate the proportion of base station communication equipment





Overview

Do base stations dominate the energy consumption of the radio access network?

Furthermore, the base stations dominate the energy consumption of the radio access network. Therefore, it is reasonable to focus on the power consumption of the base stations first, while other aspects such as virtualization of compute in the 5G core or the energy consumption of user equipment should be considered at a later stage.

How to calculate base station coverage?

Look up the traffic per base station, as supplied by the base station manufacturer. 5. Divide 3. by 4. to get the number of base stations in your target area. 6. Situate the base stations strategically at the intersections of roads and railways, and at airports, schools, business areas and shopping malls to get a 95% coverage.

How to add capacity to a base station?

Also you need to make sure the backbone (i.e. backhaul) connectivity is available and required equipments also to be equipped in the same base stations. Each base station can have 3 sectors to max. then you can play with Micro/Pico solutions to add up the capacities provided you have enough spectrum.

How do Björnson/Hossain/Peesapati models calculate baseband processing power consumption?

The Björnson/Hossain/Peesapati models calculate the baseband processing power consumption as the sum of the power required for channel estimation, coding and decoding and linear processing. It depends on the number of antennas at the base station, the number of users, the data rate per user, and the bandwidth.



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How to calculate the proportion of base station communication equipment

The reference capacity of the base station corresponds to the available bit rate of the lowest modulation scheme served with that BS (here BPSK1/2). FFT used and T_s (symbol duration) ...

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