



LLSE CONTAINERS

# Base station power supply measurement





## Overview

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What is a base station & a PV powering Unit?

The base station uses radio signals to connect devices to network as a part of traditional cellular telephone network and solar powering unit is used to power it. The PV powering unit uses solar panels to generate electricity for base stations in areas with no access to grid or areas connected to unreliable grids.

How to calculate base station power consumption per unit area?

The base station power consumption per unit area is given by: where  $\lambda$  a,  $P_a$ ,  $P_s$ ,  $\rho$ , and  $\theta$  are the base station density in sleep mode, the active mode power, the sleep mode power, the traffic load, and the ratio between sleep mode and active mode power, respectively.

How is the energy consumption of a base station calculated?

The energy consumption of the Base Station under test shall be calculated during the whole test period. The total daily energy consumption of the Base Station will be the sum of weighted energy consumption for each traffic level i.e. low, medium and busy-hour traffic.

Is there a direct relationship between base station traffic load and power consumption?

The real data in terms of the power consumption and traffic load have been obtained from continuous measurements performed on a fully operated base station site. Measurements show the existence of a direct relationship between base station traffic load and power consumption.



## Base station power supply measurement



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