

Energy-saving measures for communication base station energy storage systems

How can a base station save energy?

A significant saving of energy (from both environmental and economic point of view) can be obtained by implementing the energy efficiency measures like improving transmitter efficiency, upgrading system features and using alternative sources and energy saving during low traffic of base stations [15].

What is energy saving technique?

The energy saving technique considers transmitter shut down duration, cell availability & channel availability ensuring the quality of service at the time of transmitter being switched off. The dynamic shut down technique algorithm has the potential to switch on/off the transceiver as per the traffic generated and reduce the energy consumption.

Does a green wireless network reduce the energy consumption of base stations?

The measured results revealed that the proposed model reduces the energy consumption of base stations by up to 18.8% as compared with the traditional static BSs, which is a step forward towards the implementation of green wireless communication.

What is base station energy consumption index (ECI)?

Brief description about components of the base station Energy Consumption Index (ECI)--It represents the efficiency of BS power utilization. The lower value of ECI means greater EE as mentioned in Eq. 6 below. Its unit is J/bit.

What are the different energy saving techniques in cellular networks?

The different energy saving techniques in cellular networks are the efficient hardware design, hybrid energy sources, network planning & management and energy-aware radio technology. In this study, DTST has been studied critically which is a promising technique to save energy and is the main theme of this research.

How to monitor energy consumption of Base Transceiver system during low traffic?

Energy consumption of base transceiver system during low traffic is monitored. Wastage of energy consumption is monitored during low traffic. An algorithm for dynamic transmitter shutdown technique is proposed. Pilot test is conducted on dynamic transmitter shut down technique by using proposed algorithm.

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In today's 5G era, the energy efficiency (EE) of cellular base stations is crucial for sustainable communication. Recognizing this, Mobile Network Operators are actively prioritizing EE for ...

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To further explore the energy-saving potential of 5 G base stations, this paper proposes an energy-saving operation model for 5 G base stations that incorporates communication caching ...

This chapter aims at providing a survey on the Base Stations functions and architectures, their energy consumption at component level, their possible improvements and the major problems ...

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