EMPOWERING THE FORMATION OF WIRELESS SENSOR NETWORK BASED ON NRF24

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The use of wireless sensor networks to monitoring the state of different large objects such as warehouses, manufacturing facilities, etc. is increasing. The most effective solution is the use of radio modules nRF24 in virtue of their low cost, low power consumption, addressing the problem of miniaturization of devices and data transmission capabilities at high speed. Enhanced Shock Burst technology is provided for addressing of the devices during the formation of wireless network. However, it allows to connect on the same frequency only a small number of devices, which complicates the creation of a large-scale multi-user network. In this regard, an algorithm that allows to enlarge capabilities of these transceivers and, consequently, capabilities of wireless sensor network was developed. This algorithm uses a special commands embedded in data packets of measurement information, and it allows to increase the network opportunities at the software level. Thus the algorithm does not exclude checking the integrity of packages on the physical level.

Keywords: wireless sensor network; nRF24; algorithm for network expansion; algorithm of addressing.

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