A WSN-BASED ON-LINE WORKING CONDITION MONITORING SYSTEM FOR LARGE ELECTRICAL EQUIPMENT

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Abstract- To solve the problems of traditional wired on-line monitoring system which has lines too much, cost too high, fault diagnosing and maintaining difficulties and so on, an on-line working condition monitoring system for large electrical equipment based on wireless sensor network (WSN) is proposed, designed and implemented. CC2431 chips were used for hardware design of wireless sensor network node and base station, and the TinyOS transplanted into the sensor nodes and base stations are discussed in detail. Then, a management software system based on LabVIEW and database programming technique is proposed and implemented. The experiment results show that the system can satisfy the needs for real-time data gathering, data storage, data curve drawing, low power consumption, wide coverage, no region limitation. It's a good operation performance.

Index terms: WSN, CC2431, TinyOS, LabVIEW, SQL, On-line Monitoring.