

real-time. Data transmission is stable and reliable. It provides an important basis for the protection of the lives and safety of mine personnel.

VII. Conclusion

It has been brought forward a design and implementation

of mine personnel vital signs monitoring terminal based on WSN network, and a detailed description of the hardware and software of the system is given. ARM7 embedded processor has strong capability in computing, and provides an important safeguard for data collection and transmission. Its low power consumption is very suitable for underground environments.

TABLE I Signs Parameters Monitoring Data

	Test value of pulse (times/min)	Actual value of pulse (times/min)	Error rate (%)	Test value of temperature (°C)	Actual value of temperature (°C)	Error rate (%)
1	67	67	0	37.0	36.6	1.1
2	71	72	-1.4	36.5	36.7	-0.5
3	62	61	1.6	36.8	36.8	0
4	63	63	0	36.5	36.5	0
5	73	74	-1.4	36.9	37.1	-0.5
6	78	78	0	37.1	37.2	-0.2

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