Optimal Design for Infrared Image Temperature Measurement

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ABSTRACT

This thesis is mainly made in order to correct the body of infrared ray thermal camera by United Integrated Limited Company of the Han Tang. In order to match the constant temperature measurement and proper ambient, it has to be met that condition for correct temperature inspection and adjustment. Basically, the thesis is emphasized on infrared temperature measurement skill which is under a standard ambient to establish the accurate look up table (LUT), and after repeated and algorithm aid experiments that make the LUT more accurate and feasible design in the thermal temperature measurement. In fact, it is practical algorithms and can change several control factors such as ambient temperature, relative humidity and measured humidity. We finally compare the numerous experiment data with different LUT before and after in standard ambient for conditional request. Eventually we have found the connection between the two different situations in practical implementation. Especially, this thesis points out this typical skill (LUT) in which we can easily implement the wide temperature range measurement by different LUT setup and searching techniques for real thermal camera needs.

Keywords : IR image detector ; temperature measurement ; look up table

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