A Hardware Method to Realize Control System in the Cabinet of Drop Tower

Hai Lin[*], JingchangXie

National Microgravity Laboratory, Institute of Mechanics, Chinese Academy of Sciences,

15 Beisihuan Xilu, Beijing, 100190, China

E-mail address: Cas5@imech.ac.cn

Drop Tower is an experimental facility used to provide microgravity environment for scientific experiments. In the process of Drop tower experiment, the control of experimental facility and the collection of experimental data seem extremely important. At present, we mainly adopt PLC programmable controller to realize control of experimental equipment in cabinet and collection of experimental data. Due to the limitation of PLC controller itself, some problems will exist in cabinet control process in normal operation process of Drop tower, so that we are also exploring other control methods to realize the control in cabinet. Currently, there are mainly three hardware methods that can be adopted as follows: (1) control and collection of experimental equipments based on 51 single chip microcomputer system; (2) Adopt PCM5111 modulized medium speed simulation input module and embedded computer to compose data collection and control system; (3) Adopt integrated developing industrial control module based on ARM to finish the control and collection of experimental equipments.
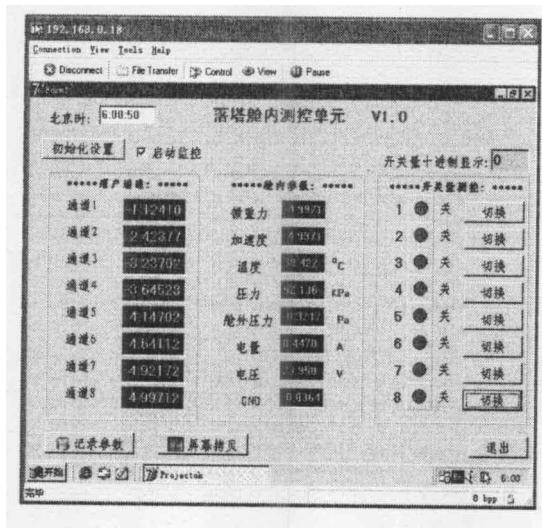

Figure 1 Description about AD Conversion Process in Program.

References

[1]. Wu Tianzhun, Delphi7 Program Design Technique and Example. Beijing: China Railway Publishing House, 2003.

[2]. Li Zhiming, Gao Yuzhuo, Classic Explanation and Analysis on Delphi7 Groupware. Beijing: China Railway Publishing House, 2003.

[3]. PCM-5111 Manual: Beijing Jizhida Industrial Automation Technology Corp, 2004.

90