

具成本優勢嵌入式數位類比影音編解碼系統之研製 (Development of Cost-Effective Embedded System for Digital-Analog Video Coding and Decoding)

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摘要

Currently, most surveillance systems are PC-based but the cost of a PC would discourage a customer to purchase them. Hence, it would be reasonable to develop an embedded system especially for surveillance purpose. Furthermore, in most current image processing systems MJPEG is de factor image format although the compression rate of MJPEG might be just good enough for these applications. But for surveillance systems H.264 would be a better choice because it has a higher compression rate and better image quality and makes it possible to store more in the less storage space. But H.264 needs more powerful processing in computing. If the specific hardware is not adopted to accommodate H.264, the higher end processor will be required.

In order to solve the two problems mentioned above an embedded digital video recorder (DVR) is devised. In addition, Linux is ported to the system. USB is used as an interface for storage devices and both video and audio storage are supported. H.264 Codec (Coder-decoder) hardware is adopted for the image of better quality and higher compression rate to be delivered over the networks. While the video is stored in the H.264 format, the audio is stored in ADPCM (Adaptive Differential Pulse-code Modulation) format.

關鍵字 : Video compression, H.264, Linux, DVR, Embedded System