

Synchronisation of two camcorders with PID controller

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Abstract: Stereo photography is almost as old as classical photography, since the first stereoscopic camera with two lenses was made in 1849. The first stereoscopic film was made by brothers Lumière in 1903. Stereoscopy popularity had risen until the end of 1950s, when CinemaScope wide-angle format won over the stereoscopic films, mainly due to reduced production costs and higher quality. Today stereoscopic video cameras are again gaining in popularity due to cheaper ways of producing and showing stereoscopic content. The stereoscopy is mostly used in geodesy, medicine, chemistry and in entertainment industry. However, the average user is still faced to relatively high cost of professional equipment for stereoscopic (3D) filming. One of the main requirements for making stereoscopic films is that both film cameras (camcorders) are tightly synchronised. Such synchronisation is required in order to correctly fuse left and right pictures of the moving objects into the stereoscopic one. Unfortunately, synchronisation of the cameras can only be done conventionally by using professional video cameras and camcorders, since some of them have dedicated connectors for synchronisation. In order to reduce the costs for amateur stereoscopic videographer, we have developed a device which can synchronize two camcorders and keep them in synchronization permanently without opening the camcorders. The developed device is relatively cheap and enables controlling of two camcorders simultaneously via on-board buttons, by using the ordinary LANC remote controller and/or by the PC via serial (RS232) communication. Deficiency of the developed device is that it requires LANC signal on the camcorders for operation. Therefore, the synchronization of camcorders is mostly limited to camcorders produced by manufacturer SONY.