
HIGH-FRAME-RATE DRIVING

Friday, May 25 / 9:00 10:20 am / Room 104A

Chair:

Nikhil Balram, Marvell Semiconductor, Santa Clara, CA, U.S.A.

Co-Chair:

Jun Someya, Mitsubishi Electric Corp., Kyoto, Japan

61.1: Motion-Compensated Impulsive Driving Technique (9:00)

*J-H. Park, Y-J. Kim, M. Park, T. Amino, J. Oh, B. Berkely,
N-D. Kim, S-S. Kim
Samsung Electronics Co., Ltd., Chungcheongnam-do, Korea*

Motion-estimation/motion-compensation provides superior motion-picture quality, but its huge computation load results in cost issues. Impulse driving is a cost-effective solution, but it suffers from large flicker and brightness loss. Motion-compensated impulse-driving technology attempts to achieve both high motion-picture quality and cost-effectiveness by combining motion-estimation/motion-compensation and impulse driving. The key idea is to apply motion-estimation/motion-compensation or impulse driving selectively according to motion vector distribution of the incoming image sequence. The full description will be provided along with experimental results.

61.2: Development of Large-Screen Full-HD LCD TV with Frame-Rate-Conversion Technology (9:20)

*Y. Yoshida, T. Fujine, K. Yamamoto, H. Furukawa, M. Ueno,
Y. Kikuchi, S. Kohashigawa, A. Yamada, N. Takeda,
M. Sugino
Sharp Corp., Osaka, Japan*

A large-screen full-HD LCD TV with frame-rate-conversion (FRC) technology will be introduced. For LCD TV, the FRC provides superior motion-picture-quality improvement by increasing the frame rate and interpolating new frames. The improvement resulting from FRC to 120 Hz for different image object velocities found in broadcast test material will be considered. The highest object velocities are generally found in "character telops," i.e., scrolling text, and for these input signals a significant improvement by using FRC technology was obtained.

61.3: A Novel Driving Method Using Two-Dimensional Spatial Averaging for High-Speed Driving of AMLCDs (9:40)

*B-H. You, J. Lee, D-G. Kim, J-H. Park, S-S. Kim
Samsung Electronics Co., Ltd., Chungcheongnam-do, Korea*

A new driving method employs two-dimensional spatial averaging. It successfully eliminates the vertical line artifact caused by the luminance difference from unbalanced polarity. The spatial averaging method reduces charging time, minimizes component heating, and achieves better image quality.

61.4: Novel Impulsive Driving Schemes Using Frame Doubling for 120-Hz LCD Panels (10:00)

*H. Nam, J. Oh, B-H. Shin, K-Y. Oh, B. Berkeley, N-D. Kim,
S-S. Kim*

Samsung Electronics Co., Ltd., Chungcheongnam-do, Korea

Two new impulsive-driving technologies that improve moving-picture quality were incorporated into a 120-Hz LCD panel. A dark frame is simply added using the adder and shifter without any LUTs, and a new backlight flashing method was implemented without ghosting. The measured MPRT values were 10.8 and 4.4 msec in terms of PBET, respectively.

BREAK

(10:20–10:40)

AUTHOR INTERVIEWS

(12:00–1:00)