

DynaFlash is a high-speed projector with 3ms delay

5 August 2015, by Nancy Owano



A team from the Ishikawa Watanabe Laboratory at Tokyo University and Tokyo Electron Device (TED) have come up with a prototype of a high-speed projector called "DynaFlash" which can project 8-bit images up to 1,000fps with 3ms delay. DynaFlash is actually a projection mapping system for tracking objects moving at high speed. A video showing the DynaFlash at work is an impressive video.

Performance characteristics include a high frame rate and low latency. That DynaFlash can modify its projection to match a moving object with a lag of only three thousandths of a second has been seen as quite impressive.

The University of Tokyo has created the fastest ever projector, said Projector Point, a supplier of AV equipment in the UK. The DynaFlash capability of projecting images at 1,000 frames-per-second, said Projector Point, makes it "41 times faster than the average frame [rate](#) of movies."

According to the video notes, "DynaFlash can achieve 8-bit-level [image projection](#) up to 1,000 fps with the minimum delay of 3ms. The performance of high [frame rate](#) is realized by using the digital micromirror device (DMD), high-brightness LED, and the high-speed processing module controlling these two devices."

Eric Limer in *Popular Mechanics* explained how DynaFlash is a projector-plus, in that it is a "projector with eyes that's also attached to a computer. That means that it not only beams out light, but it can also look at the surface it's projecting on, read in the angle of the surface, and then modify its projection to match a moving object in real time with a virtually imperceptible lag of only three thousandths of a [second](#)."

The DynaFlash team said that as a "first example application," they have come up with a projection mapping system for high-speed moving objects. They discussed how their system makes a difference. Conventional display technologies do not have enough speed performance when compared with the motion speed of the object, they said. "This causes the large misaligned gap in the interaction of the image projection to the moving object."

They worked at resolving this with high-speed processing performance. As for further research, the plan is to develop "sensing with the order of millisecond, for example three-[dimensional](#) measurement, whose moment cannot be perceived by human eyes."

What would this mean in real-life applications? "This technology could mean projectors no longer have to rely on static targets such as a flat screen, massively increasing their potential uses," said Project Point.

DynaFlash was announced as a joint development by both the University of Tokyo and Tokyo Electron

Device. In a number of application fields such as projection mapping and AR (Augmented Reality), said the TED announcement, [projector](#) technology for image projection to the real-world object has become important.

Discussing future plans, TED said it plans to sell "DynaFlash" as an original brand "inrevium" in the summer of [2016](#).

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