

First Strobe Pulse-width Control in ITS mode

Multiple Image capture in ITS mode

GEViCAM GP and GD series allow multiple image capture with different exposure times as “bracketed exposure control”. There are three consecutive images output, each with different exposures. Each exposure will be output after the strobe signal is output.

Due to the nature of async trigger and continuous image capture, the very first strobe output pulse occasionally becomes very short once a while. This only affects the strobe output signal.

For applications that trigger a strobe with these pulses, a pulse may be too short to fire the trigger or too short for the LED strobe to illuminate.

Strobe output pulse width control

Described here is a method of extending the pulse width of the strobe output. Strobe output is defined as TTL default output (I1). The signal is routed to pulse generator 1 is I6 in this example to extend the pulse width.

The input of pulse generator 1 is Q8 and the output of pulse generator 1 is I6 as the default.

Therefore, LUT programming is;

Q0=I0 (External TTL Trigger input)
Q8=I1 (Internal strobe TTL signal to PG1 input)
Q1=I1 | I6 (Or logic between strobe and PG1 output)

The output of PG1 is I6 and we make an “or” circuit to chose longer pulses between I1 input and PG1 output. Pulse Generator 1 is also programmed in the same way as Pulse Generator 0.

In this example, the strobe pulse is set at 1 μ s granularity. 1000 counts generate a 1 ms of pulse width as the minimum value.

This extension of the pulse width applies to all pulses (first, second and third pulses). However, the shortened pulse only occurs for the first one and normally affects only the first pulse width. For bracketing, we suggest to using the shortest exposure for the first frame and extend second and third exposures so that this PLC pulse width control will only affect the first pulse by setting the PG value at the minimum.