Opt9221

* Q4 – 1 – Frame rate, sub frames and quads

Frame rate measures the rate at which data is given out by the TFC to the software. It corresponds to the same frame rate term used in digital video cameras.

Internal to the TFC, each frame is divided into a similar set of measurements called sub-frames, as shown in section *7.3.3.1* of [OPT9221](http://www.ti.com/product/OPT9221) datasheet. Each sub-frame has all the measurements necessary for phase computation. Multiple sub-frames are used to overcome the limitations of pixel saturation, and therefore enhance the dynamic range of the system. Sub – frame data is internally averaged to form each frame data.

Now within a sub – frame, the relative phase between the illumination and sensor modulation signals are changed. Quads denote the no of steps of such phase changes and by how much they are changed. For example quad=4 means within a sub - frame, the relative phase between illumination and sensor modulation signals are changed in 4 steps and they are 0⁰,90⁰,180⁰ and 270⁰.

The main point to note here is that sub - frames are identical whereas quads are not.