

Propagation delay calculation

- Board: Sensor motherboard
- Revision: REV20200407C
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On PCB trace, the propagation delay is given by:

$$t_{pd} = 85\sqrt{E_r} \text{ picosecond/inches}$$

Where E_r (effective dielectric constant for FR4) is 4 for stripline (inner layer).

The maximum trace length is in the inner layer (layer 3) and the length of the trace is 7.08 inches, so the propagation delay for this trace is 1.161 nanoseconds.

The speed of this SPI trace is 54 Mhz (18.5 ns), so the skew of the trace will be +/- **6.5%**

References

[1] <https://www.analog.com/media/en/training-seminars/tutorials/MT-094.pdf>