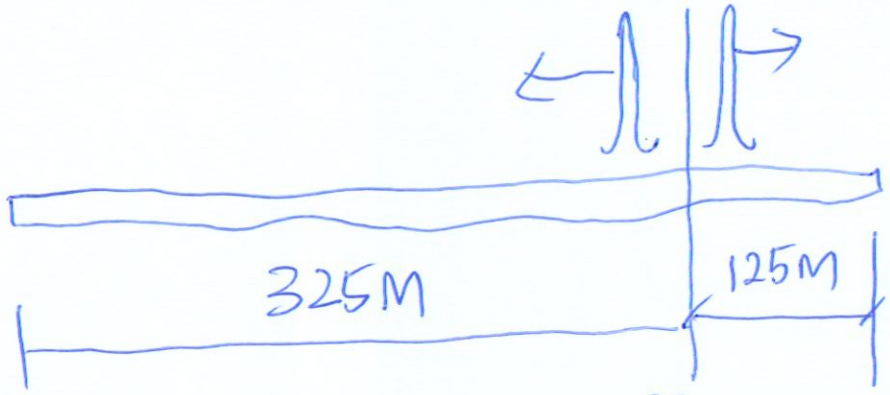
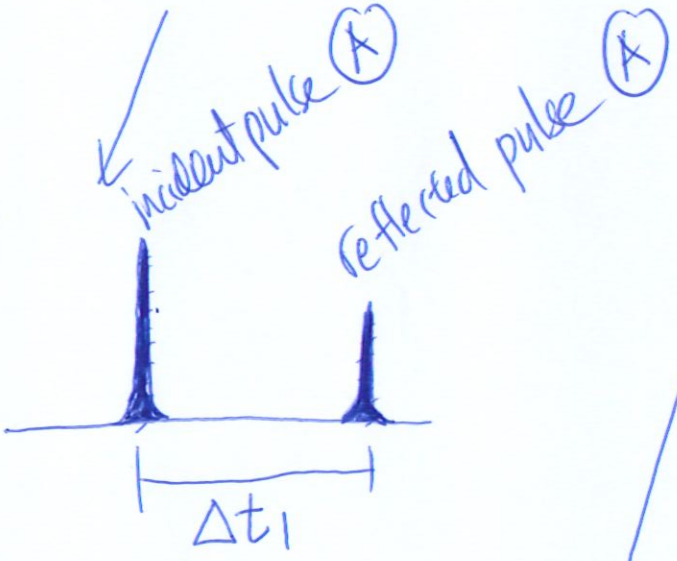
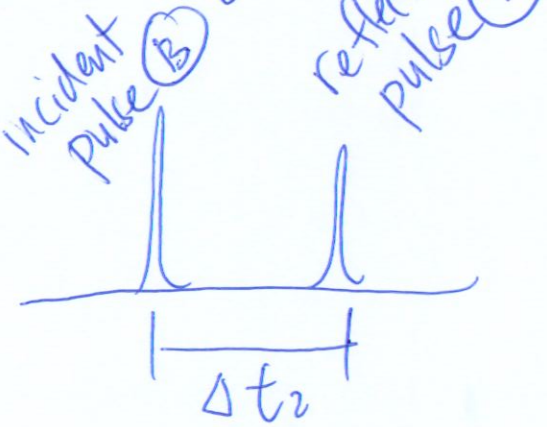


assume 160 m/μs speed.





$$\Delta t_1 = \left(\frac{(125\times2)+325}{160} - \frac{325}{160}\right)$$

$$= (3.59 - 2.03)\,\mu s$$

$$= 1.56\,\mu s.$$

$$\Delta t_2 = \left(\frac{2(325)+125}{160} - \frac{125}{160}\right)$$

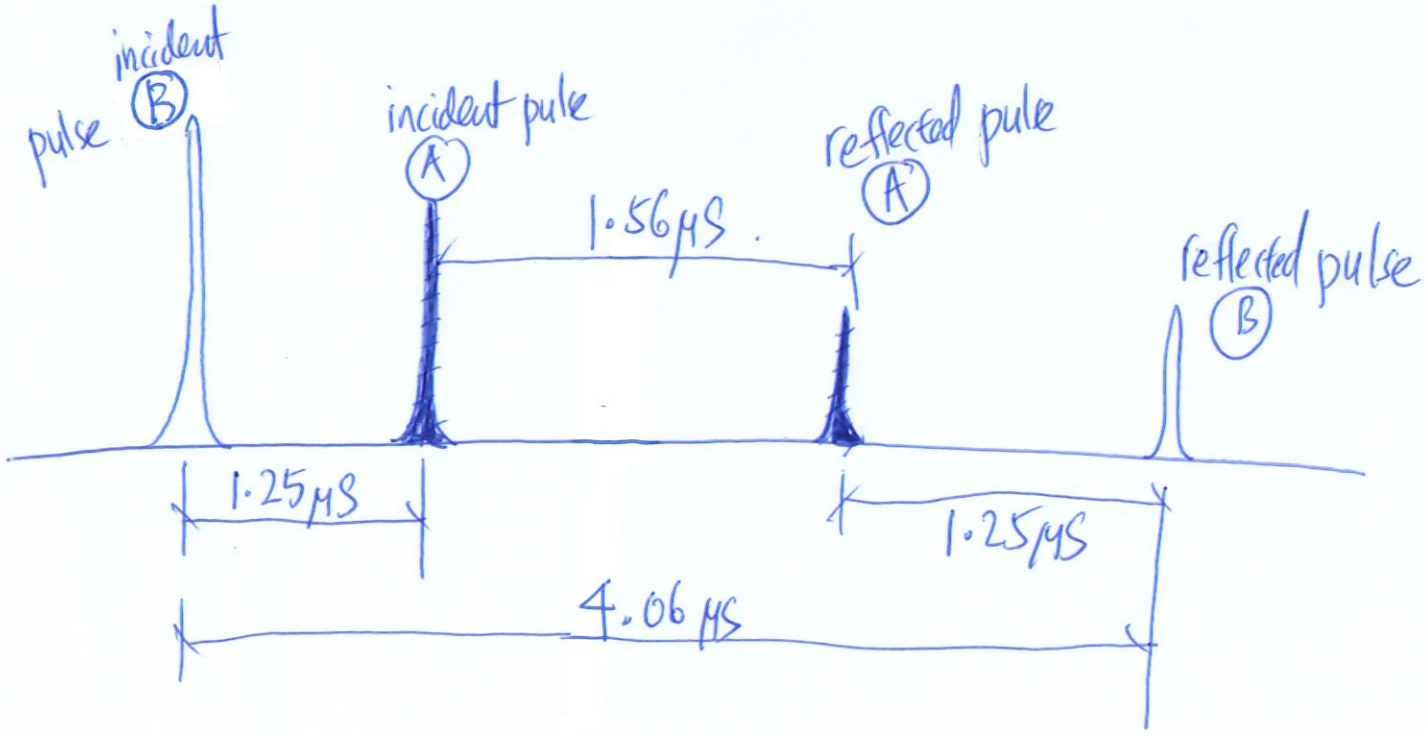
$$= (4.84 - 0.78)\,\mu s$$

$$= 4.06\,\mu s$$

When (A) & (B) are GPS time synchronized

The time difference between incident pulse (A) and incident pulse (B)

$= \left(\frac{325}{160}\right)\mu s - \left(\frac{125}{160}\right)\mu s = 1.25\ \mu s.$



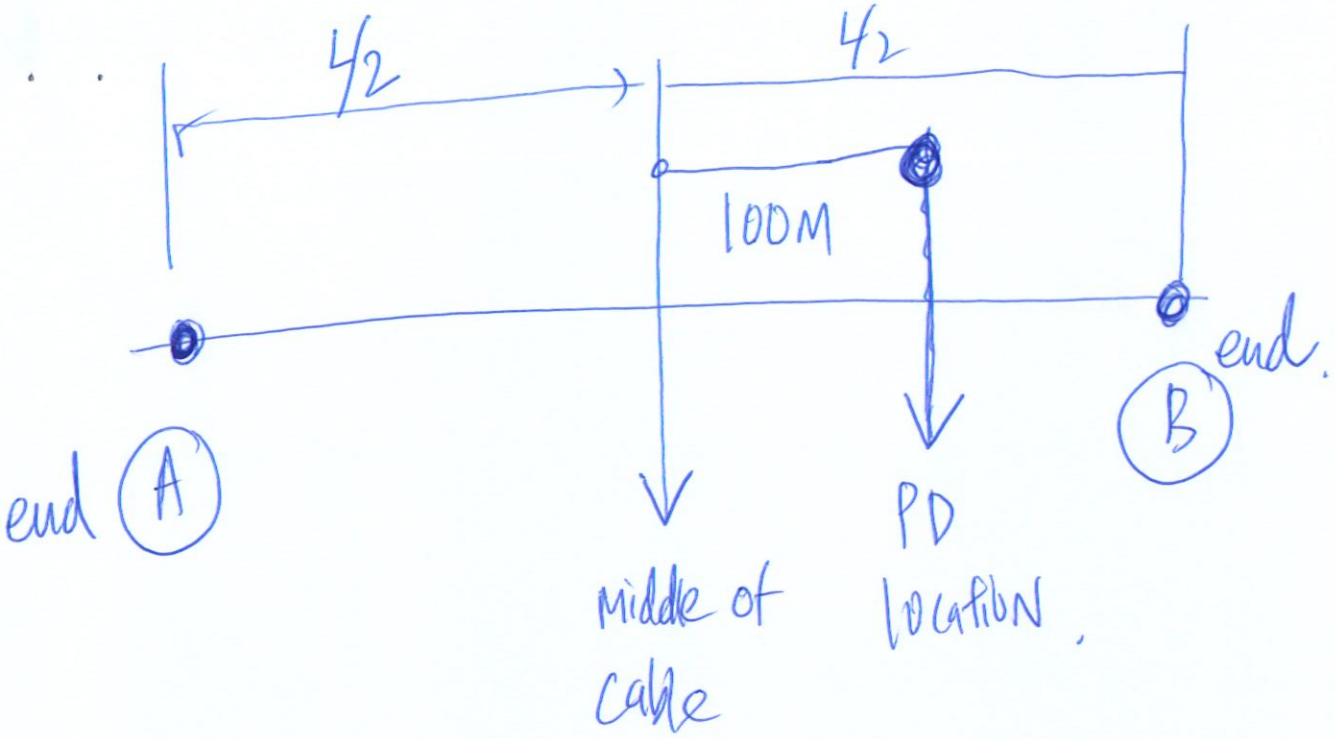
- We now assume we do not know the cable PD location and the two time synchronized measurement at (A) & (B) are as per the measurement pulse of page (2).

- The 1.25 μS between Incident pulse (B). & Incident pulse (A)

will give the PD distance from the middle of the cable $= 1.25\,\mu s \times \frac{160}{2}$.

$= 100\,m$

- Since the 1st appearance is incident pulse (B), the PD location is more towards (B) direction.



- cable length can be measured by separate TDR and say it is 450M.

$\Rightarrow$ Location of PD from (B)

$= \frac{450}{2} - 100 = 125\,M$

Location of PD from (A)

$= \frac{450}{2} + 100 = 325\,M$

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