

### Calculation of fifo\_depth:

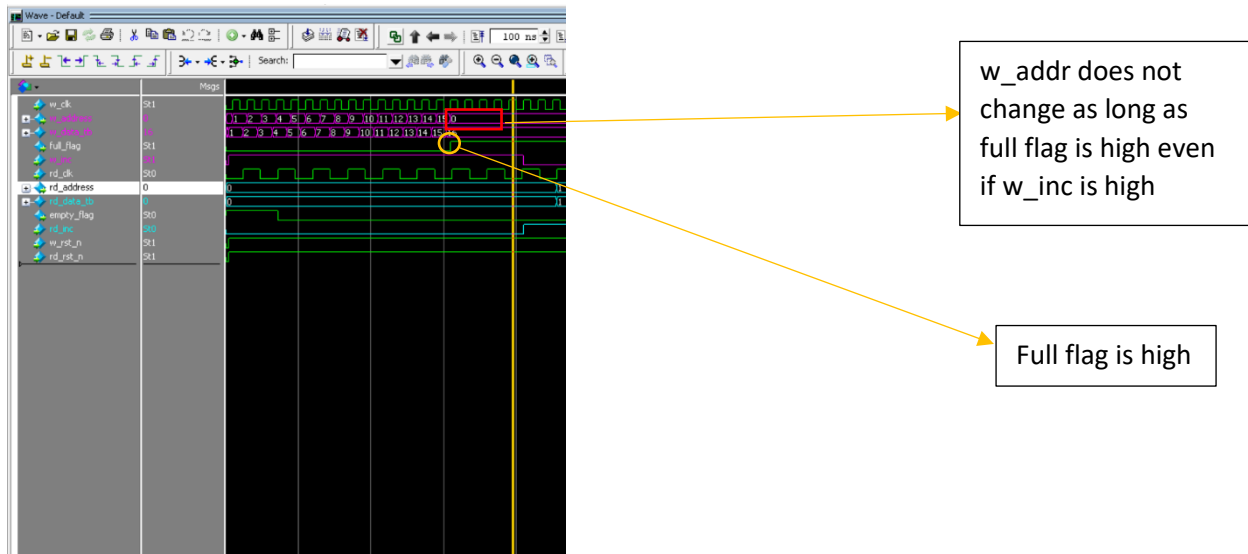
- Time taken to do 1 write =  $\frac{1}{100 \text{ MHz}} = 10 \text{ ns}$
- Time taken to do 1 read =  $\frac{1}{40 \text{ MHz}} = 25 \text{ ns}$
- Time taken to write 10 frames =  $\frac{10}{100 \text{ MHz}} = 100 \text{ ns}$
- Number of readed frames within 100 ns =  $\frac{100}{25} = 4 \text{ frames}$
- Then >> min fifo depth = 10-4=6
- But 6 frames only will cause overflow so we will assume 16

fifo depth =16

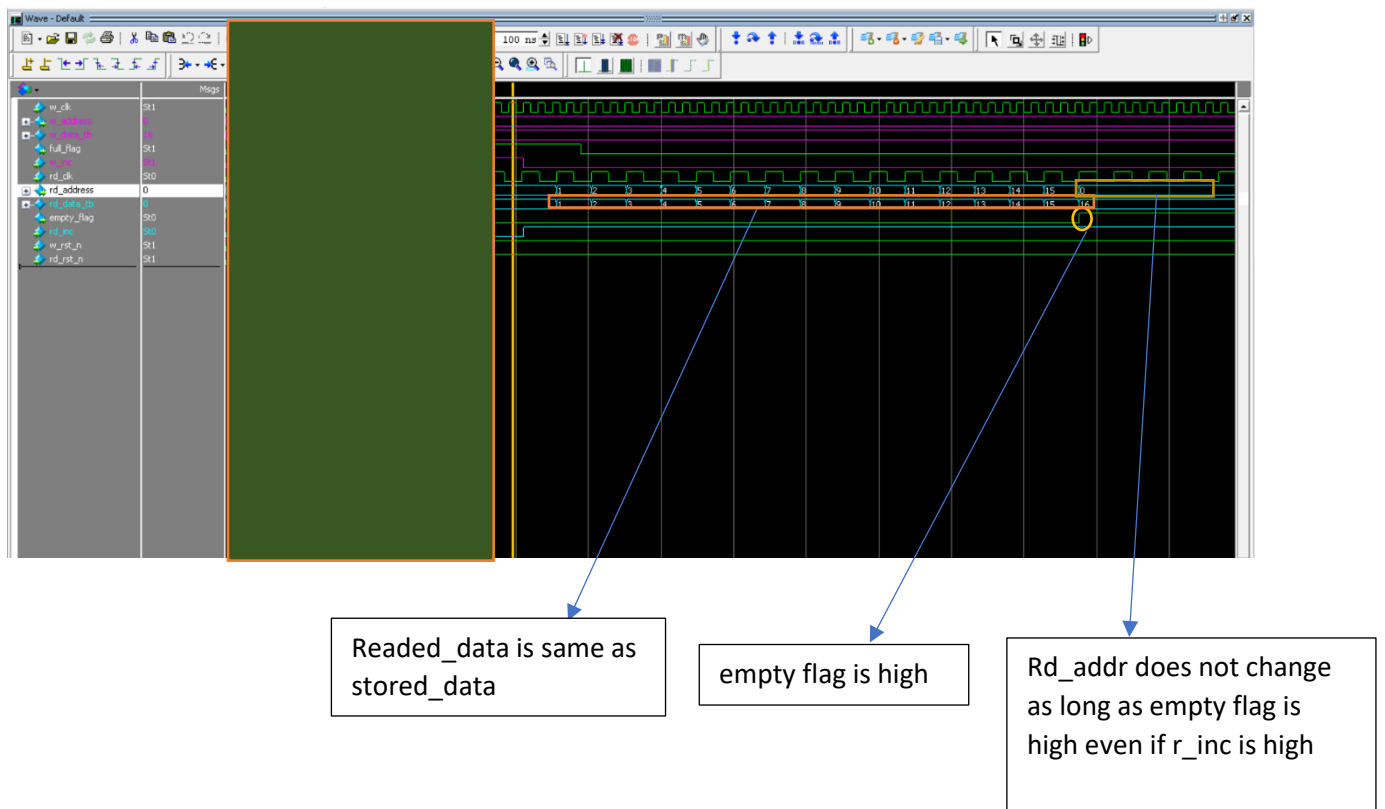
## Testing grey coding of w\_ptr and rd\_ptr:

[illegible]

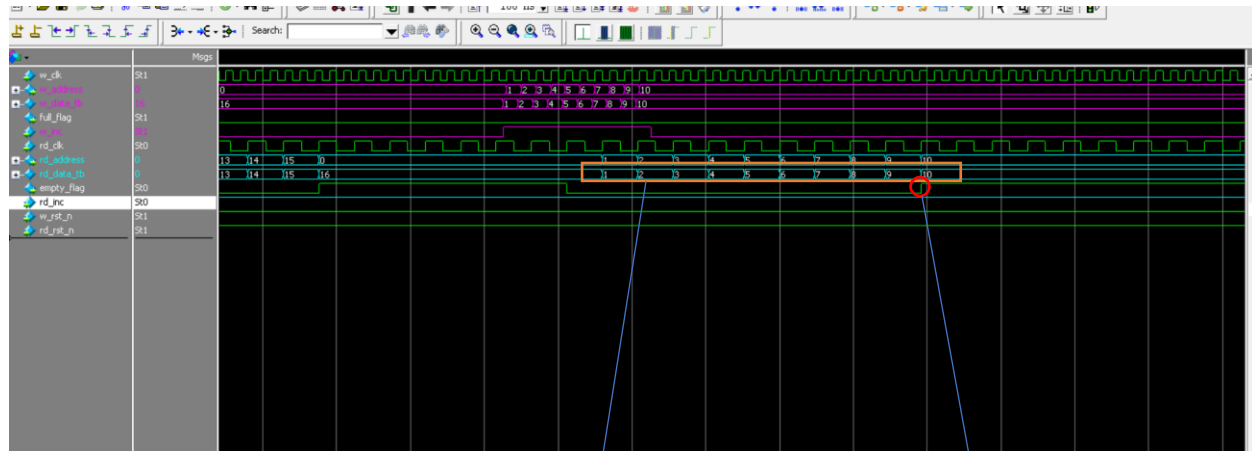
Testing full flag by writing in all fifo memory locations and read is idle :



Testing empty flag by reading all stored data from the fifo memory and write is idle :



Testing write and read 10 frames in parallel:



Readed\_data is same  
as write\_data and no  
loss happens

empty flag is high