Performance Comparison of MIMO Midamble Location Options (Section 15.3.5.4.2)

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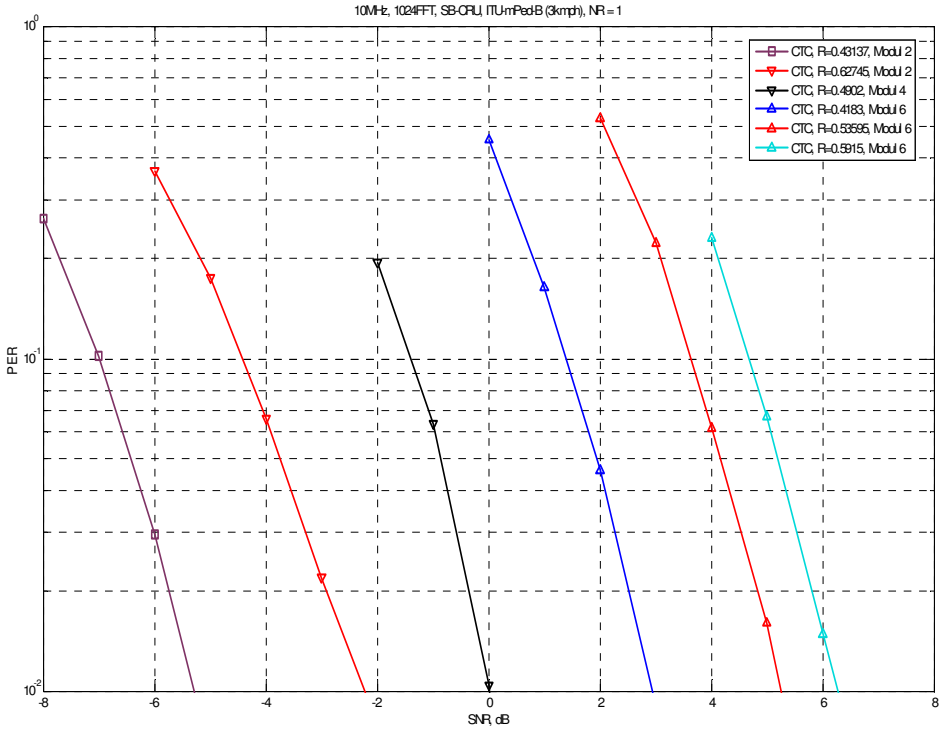
Purpose:
Discussion

Back Up: LLS Configuration

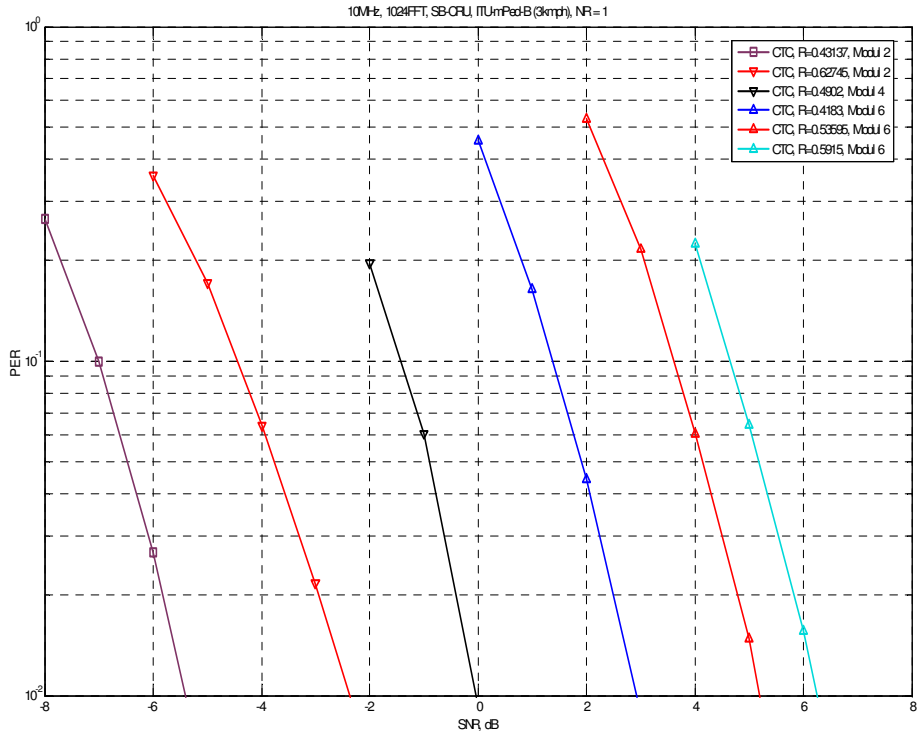
- 4x2 CB (4,1,6)
- 10MHz, 1024
- SB CRU, rank-1, best one
- Practical channel measurements using MIMO midamble
- Practical channel estimation using 2D MMSE
- MS speed: 3kmph, 10kmph
- DL:UL ration: 5:3
- Two options for MIMO midable location
  - The second DL subframe
  - The second last DL subframe

Low Mobility Scenario (3kmph)

Second DL subframe



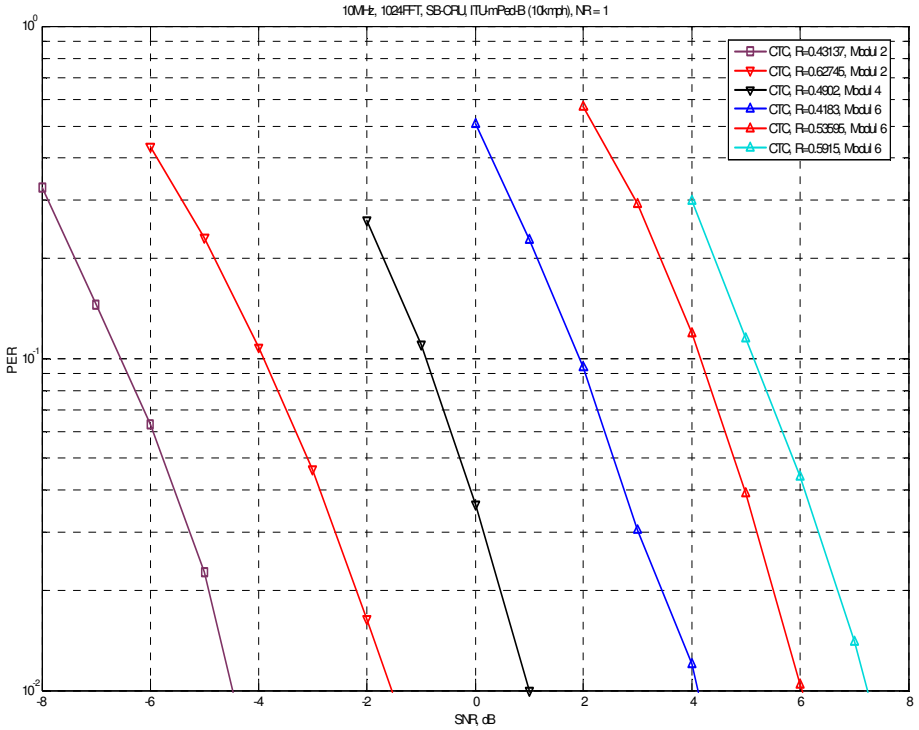
Second last DL subframe



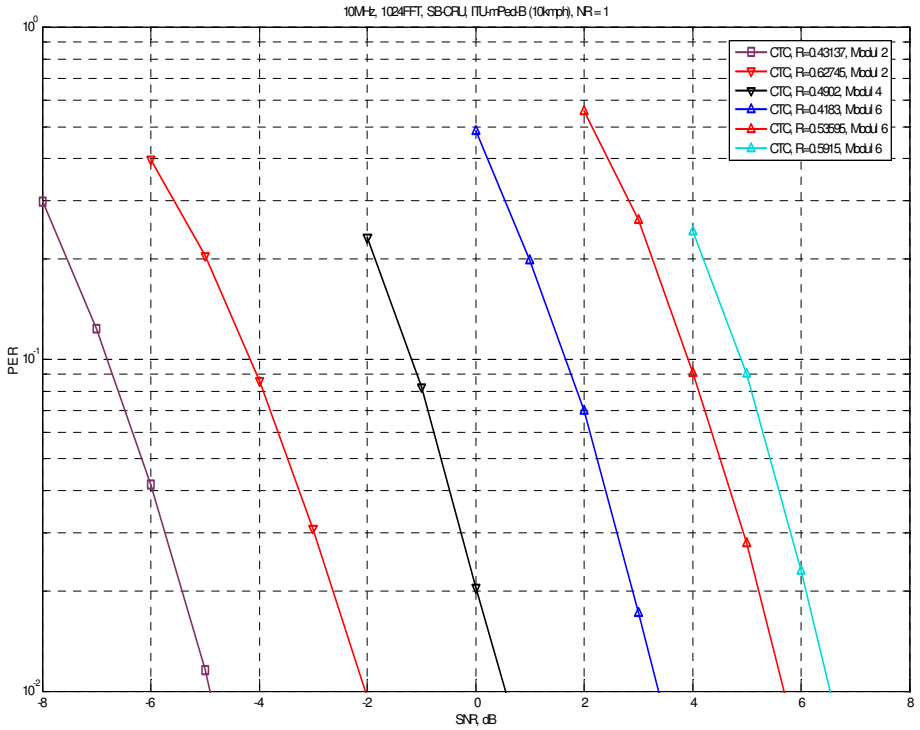
The performance difference between two MIMO midamble options is less than 0.1dB

Medium Mobility Scenario (10kmph)

Second DL subframe



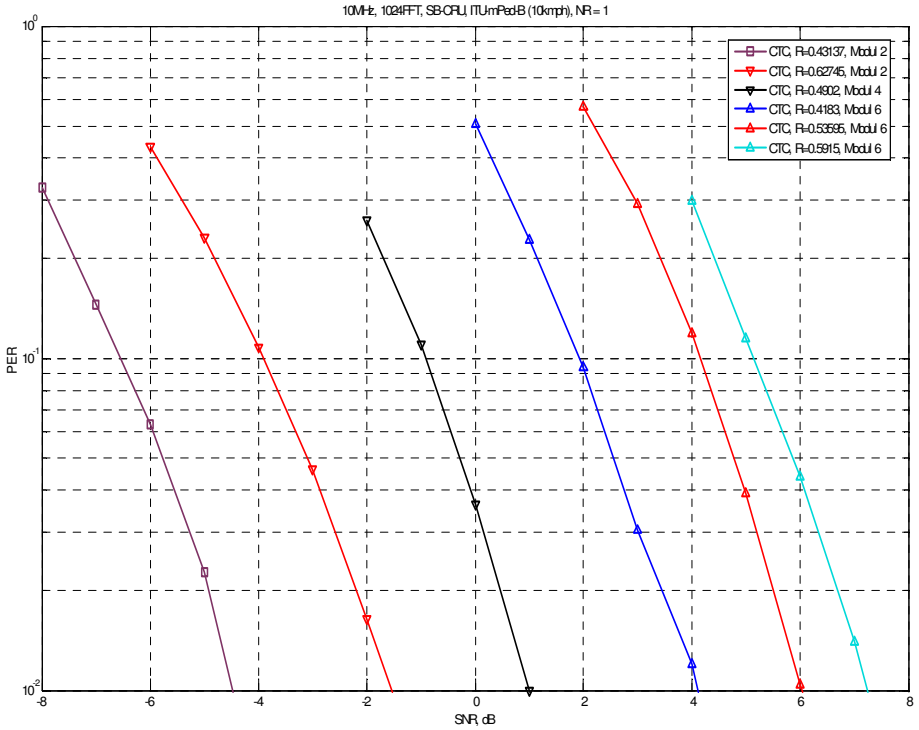
Second last DL subframe



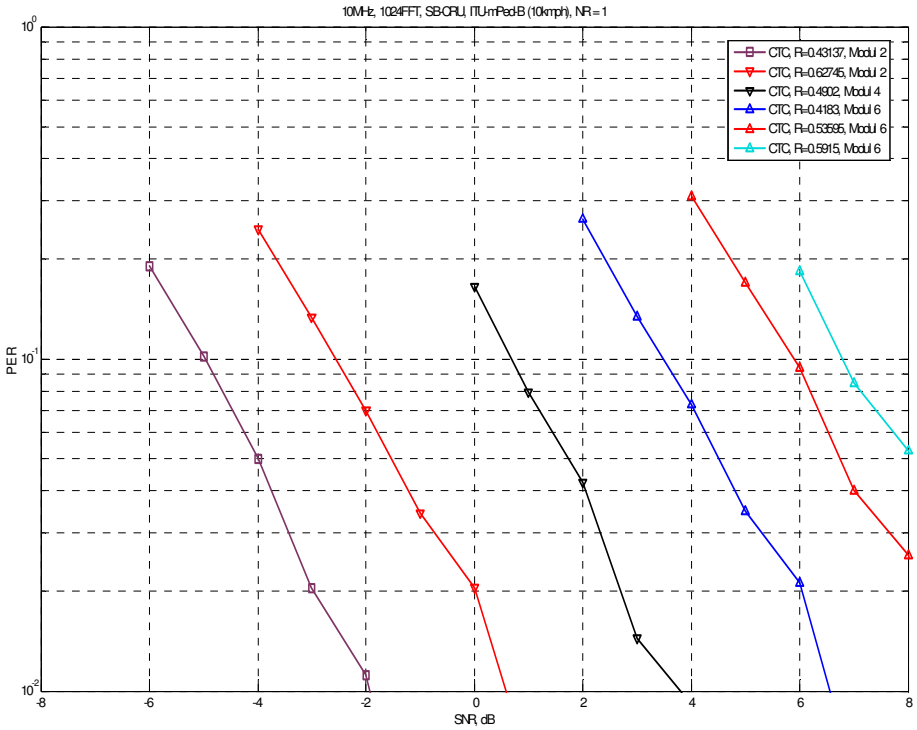
The performance difference between two MIMO midamble options is about 0.5dB

Medium Mobility Scenario (10kmph): loss due to shortage of time for midamble processing at AMS

Second DL subframe



Second last DL subframe (additional frame for processing due to shortage of time)



The performance advantage of second over second last DL subframe is about 2dB

Summary

- The performance difference between the second and the second last DL subframe options at PER=10% is less than 0.1dB for main low mobility scenario (3kmph)
- The performance difference between the second and the second last DL subframe options at PER=10% is less than 0.5dB for medium mobility scenario (10kmph)
- For medium mobility scenario (10kmph) the degradation due to shortage of time for MIMO midamble processing in second last DL subframe option may be more that 2dB