

**TSG-RAN WG4 meeting #8
26th – 29th October 1999
Sophia Antipolis**

Agenda item: 8.4

Source: Motorola

Title: Further FDD Uplink Simulation Results for Normative Reference Channels

Document for: Discussion

1.Introduction

Motorola submitted paper TSGR4(99)586 at the recent RAN WG4 simulation ad-hoc 01 in the Netherlands. Only static channel simulation results pertaining to the normative reference channels given in annex A of [1] were presented. This paper presents results on the three multipath channel scenarios (case 1, case 2 and case 3) as described in annex B.2.2 of [1].

2.Simulation Parameters

The following simulation parameters have been used.

| | |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Chip Rate | 3.840 Mcps |
| Channel Estimation | Ideal |
| Inner-loop power control | Off |
| Outer-loop power control | Off |
| Propagation Channel | CASE 1 (2 tap, 3kmph) CASE 2 (3 tap, 3kmph) CASE 3 (4 tap, 120kmph) |
| Receiver | RAKE – number of fingers/antenna = number of taps in propagation model. A-priori knowledge of channel tap placement (delay) |
| Antenna configuration | Both of : no diversity and 2 antenna Rx diversity |
| Channel Oversampling | 1 sample/chip |
| AGC Emulation | Off |
| ADC Emulation | Off |

Turbo decoding is log-MAP for 64, 144 and 384 kbps services with 8 iterations. Viterbi decoding is used for the 12.2 kbps service.

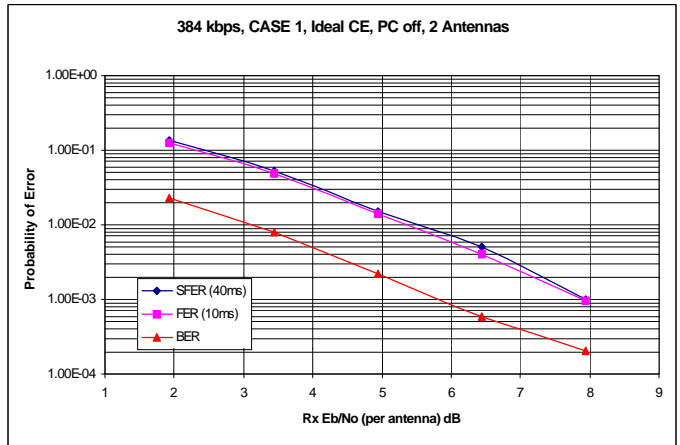
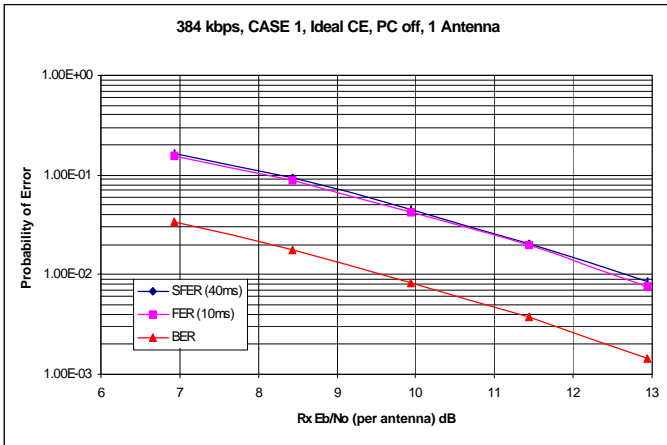
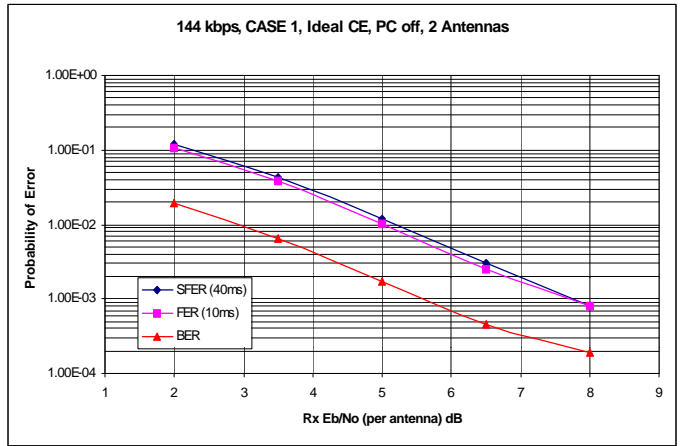
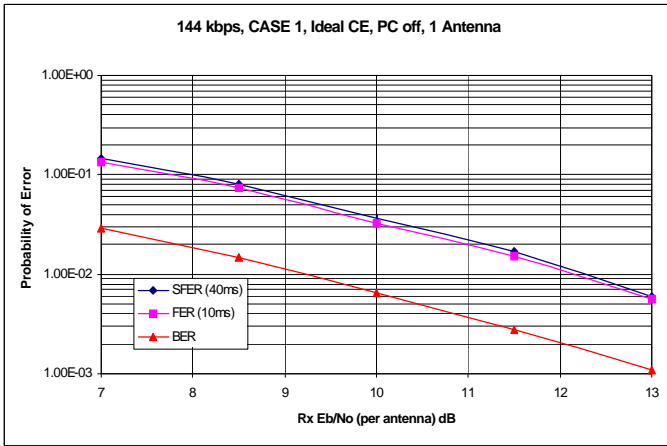
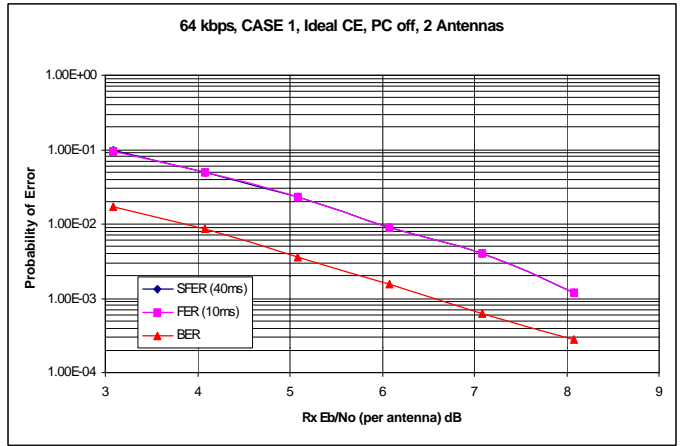
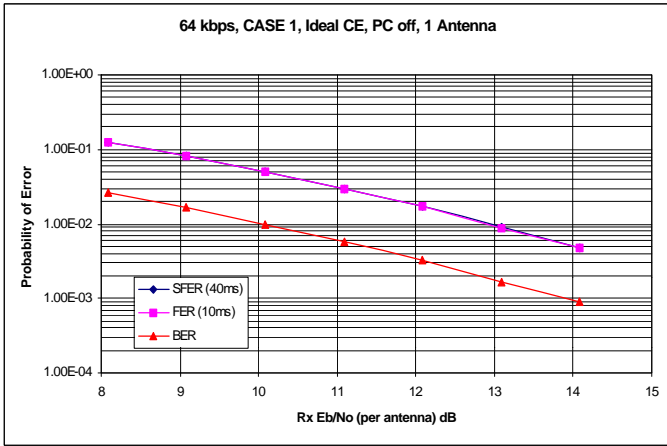
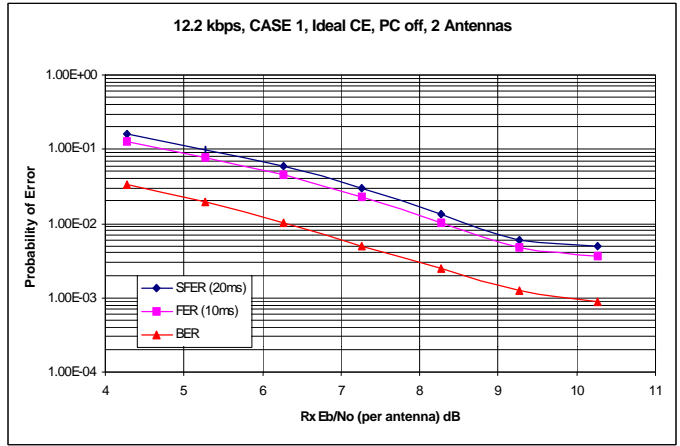
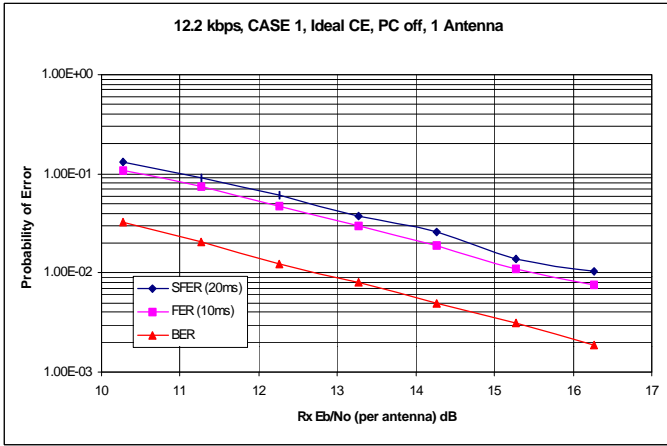
The DPCCH/DPDCH power ratios are in-line with the recent changes agreed at the ad-hoc 01 meeting :-

| Service Rate (kbps) | DPCCH/DPDCH power ratio (dB) |
|---------------------|------------------------------|
| 12.2 | -2.69 |
| 64 | -5.46 |
| 144 | -9.54 |
| 384 | -9.54 |

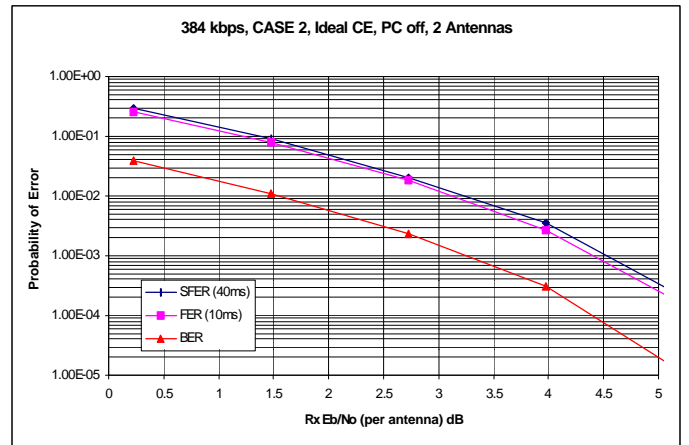
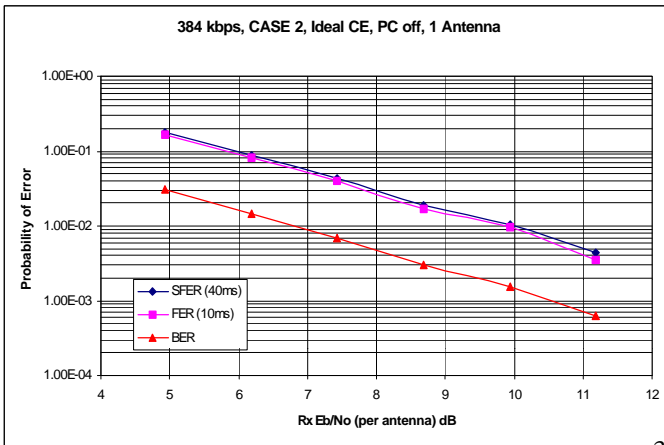
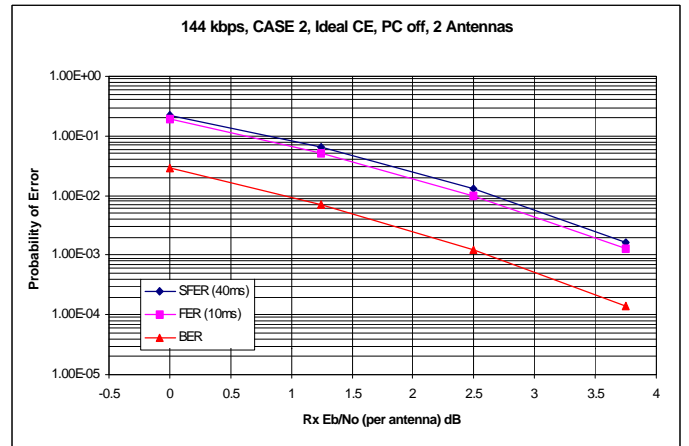
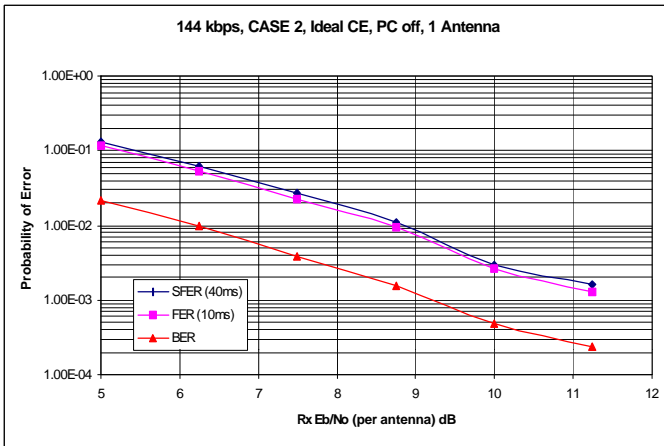
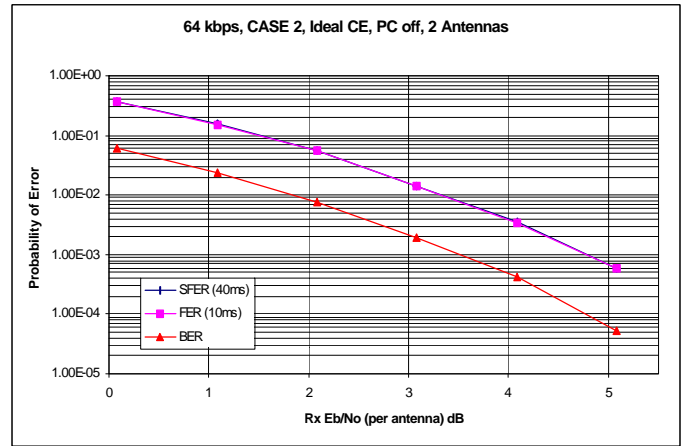
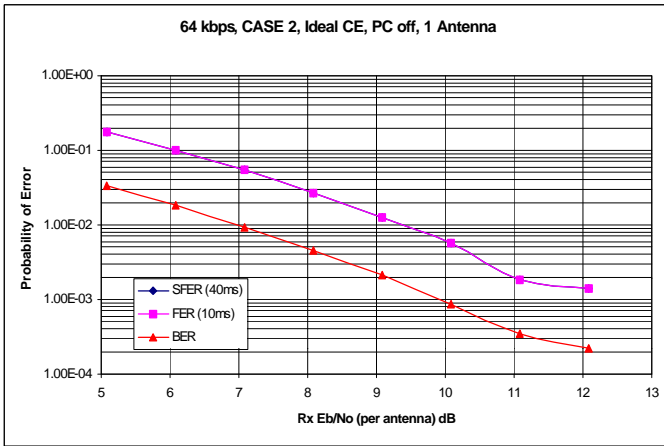
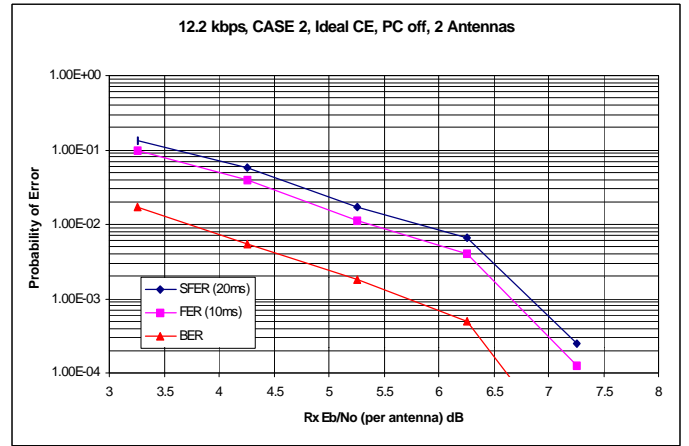
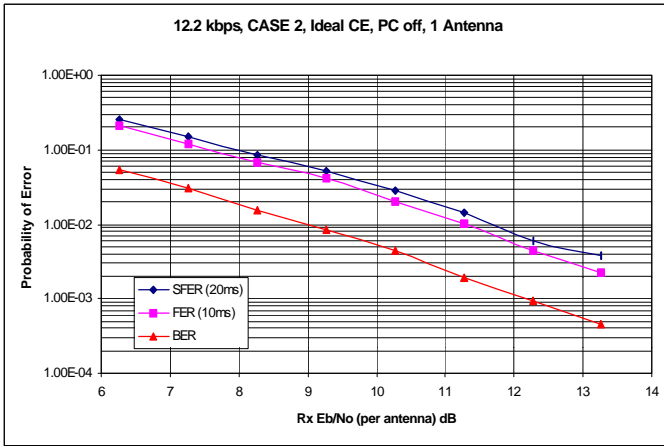
3.Simulation results

Results are given for bit error rate (BER), 10ms frame error rate (FER) and DPDCH service frame error rate (SFER) equal to 20ms for 12.2 kbps and 40ms for all other services (NB: this corresponds directly to the interleaving period for each service). The reported received Eb/No includes all overheads such as DPCCH, DCH for DCCH, tail bits, CRC bits etc...

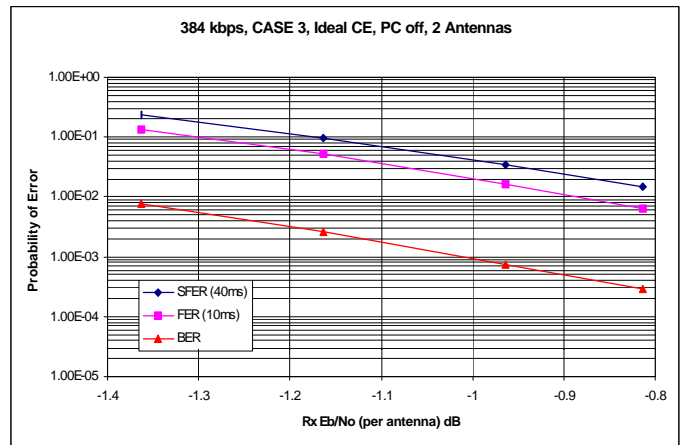
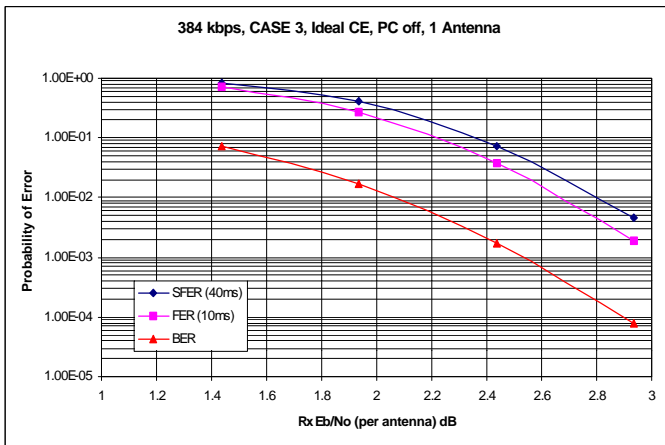
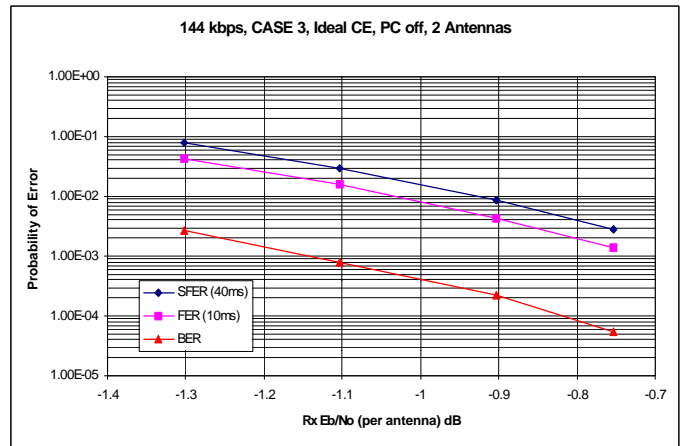
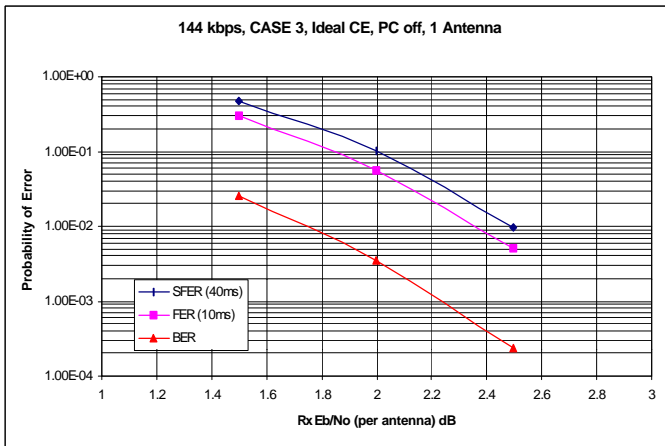
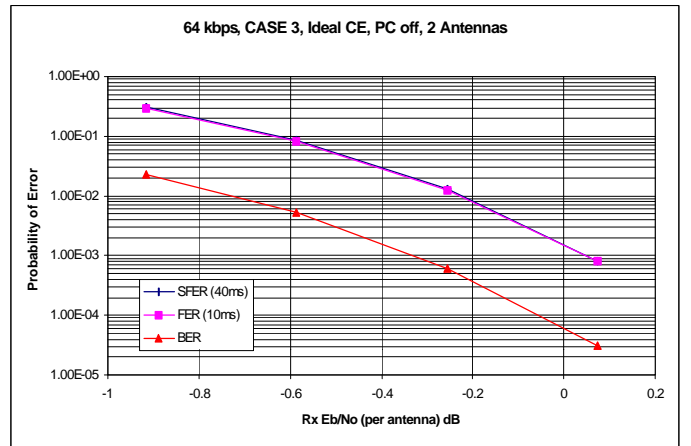
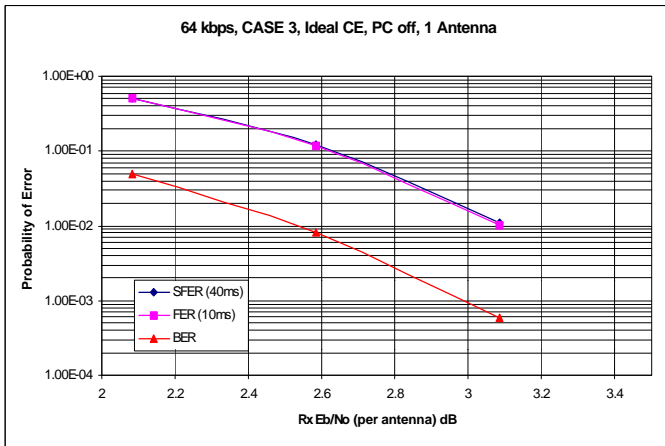
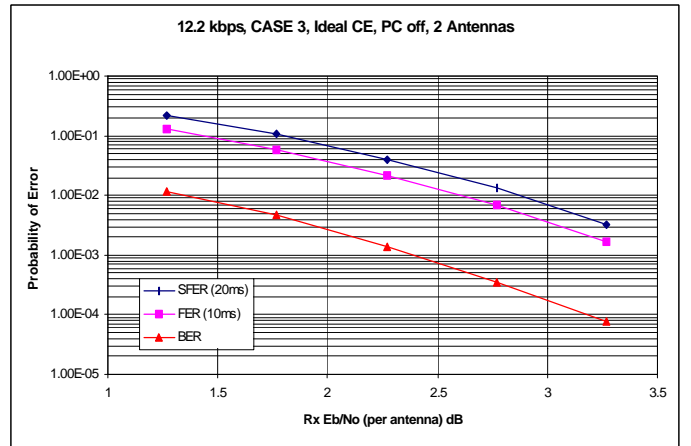
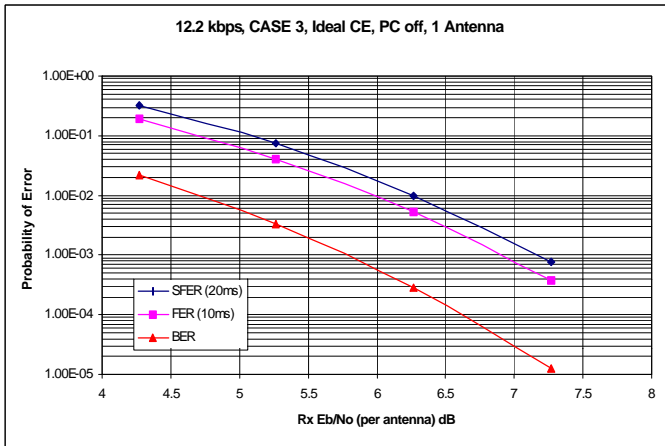
3.1. CASE 1



3.2. CASE 2



3.3. CASE 3



4.Conclusions

These results should be used to aid in specifying FDD basestation receiver performance within TS 25.104.

5.References

- [1] TS 25.104 v.2.3.0
- [2] TSGR4(99)586