

## Attachment-2

### 1) Process gain data at 11Mbps and 2Mbps

- Tests were performed at Spreading gain 10.4 dB. Engineering took extra margin.
- At 11Mbps S/N may be 18 dB, 2Mbps S/N may be 15 dB.
- SIR (Signal Interference Ratio) = S/N + Spreading gain + Lsys. (= -Mj)  
 We take only 1 dB Lsys for 11Mb/s or 0 dB Lsys for 2Mb/s into account so that :  
 11Mbps SIR = 18 dB - 10.4 dB + 1 = 8.6 (round of f upwards to 9) dB = (-)Mj  
 With this 9 dB SIR (= -9 dB Mj) we test unit and check for less than 20% errors  
 (Acutually 18.57%),  
  
 2Mbps SIR = 15 dB - 10.4 dB + 0 = 4.6 (round of f upwards to 5 ) dB = (-)Mj  
 With this 5 dB SIR (= -5 dB Mj) we test unit and check for less than 20% errors,  
 (Acutually 3.21%).

Thus in principle exact calculations in this case are :

$$\text{Processing gain for 11Mbps} = S/N + Mj + Lsys = 18 + (-)8.6 + 1 = \mathbf{10.4 \text{ dB}}$$

$$\text{Processing gain for 2Mbps} = S/N + Mj + Lsys = 15 + (-)4.6 + 0 = \mathbf{10.4 \text{ dB}}$$

### 2) Chip/symbol rate, the symbol/bit rate and the Chip/bit

Bit rate	Chip/symbol rate	Bit/symbol rate	Chip/bit rate
1 Mbit/sec	11	1, DBPSK	11
2 Mbit/sec	11	2, DQPSK	5.5
5.5 Mbit/sec	8	4, CCK	2
11 Mbit/sec	8	8, CCK	1

Note) As for how to meet the 10 dB requirement of Processing Gain is explained in 1).





























