Product Name : R200 (025-1A) FCC ID: LOZ025-1A

Name of Test : Processing Gain

FCC Part 15.247 (e) specific

The processing gain of a direct sequence system shall be at least 10dB.

Guidance on measurement by FCC

The processing gain may be measured using a CW jamming margin method. The tests consists of stepping a signal generator in 50kHz increments across the pass band of the system. At each point, the generator level required to produce the recommended Bit Error Rate (10-5) is recorded. This is the jammer level. The output power of the transmitting unit is measured at the same point. The Jammer to Signal (J/S) is then calculated. Discard the 20% worst of the J/S data points. Total losses in a system including transmitter and receiver, should be assumed to be no more than 2dB.

Therefore , processing gain = S/N+Mj+Lsys

Where

S/N= Signal to Noise ratio required at the output receiver for 10-5 error rate of an ideal receiver.

Mj= Jammer to Signal ratio
Lsys = System Losses (2dB max)

Test Results

**For 2mb data rate**

**S/N = 13dB: taken from Wireless Information Networks by Pahlavan & Levesque**
**Mj = 2.9 dB: from test in lab (20% worst discarded)**
**Lsys = 1.5 dB: system losses**

**Processing gain at 2 mb is 13dB-2.9 dB+1.5 dB =10.7**

**For 1mb data rate**

**S/N = 13dB: taken from Wireless Information Networks by Pahlavan & Levesque**
**Mj = 3.0 dB: from test in lab (20% worst discarded)**
**Lsys = 1.5 dB: system losses**

**Processing gain at 1 mb is 13dB- 3.1 dB+1.5 dB =10.5**

**For 512 kb data rate**

**S/N = 13dB: taken from Wireless Information Networks by Pahlavan & Levesque**
**Mj = 3.0 dB: from test in lab (20% worst discarded)**
**Lsys = 1.5 dB: system losses**

**Processing gain at 512kb is 13dB- 2.8 dB+1.5 dB =10.8**