



## **13. Process gain requirements**

### **13.1 Regulation**

The processing gain of a direct sequence system shall be at least 10 dB. The processing gain represents the improvement to the received signal-to-noise ratio, after filtering to the information bandwidth, from the spreading/despreading function. The processing gain may be determined using one of the following methods:

- (1) As measured at the demodulated output of the receiver: the ratio in dB of the signal-to-noise ratio with the system spreading code turned off to the signal-to-noise ratio with the system spreading code turned on.
- (2) As measured using the CW jamming margin method: a signal generator is stepped in 50 kHz increments across the passband of the system, recording at each point the generator level required to produce the recommended Bit Error Rate (BER). This level is the jammer level. The output power of the intentional radiator is measured at the same point. The jammer to signal ratio (J/S) is then calculated, discarding the worst 20% of the J/S data points. The lowest remaining J/S ratio is used to calculate the processing gain as follows:  $G_p = (S/N)_o + M_j + L_{sys}$ , where  $G_p$  = processing gain of the system,  $(S/N)_o$  = signal-to-noise ratio required for the chosen BER,  $M_j$  = J/S ratio, and  $L_{sys}$  = system losses. Note that total losses in a system, including intentional radiator and receiver, should be assumed to be no more than 2 dB.

### **13.2 Result**

Please see the process gain measurements in the attachments. The process gain of the product exceeds 10 dB.

## 14. Labeling Information

Location



Text





## 15. EUT Photos

### CHASSIS FRONT VIEW



## CHASSIS REAR VIEW





SIDE VIEW - 1

