Missy Fleming

From: Bruno Clavier
Sent: Monday, November 01, 1999 9:24 AM
To: Missy Fleming
Cc: Desmond Fraser; Shelley Grandy
Subject: FW: 2Mb Processing Gain for Samsung

Missy,
Please, add the following to the FCC reply. This is the theoretical calculation needed to measure the processing gain.
Thanks!
Bruno.

-----Original Message-----
From: Andren, Carl [SMTP:candren@intersil.com]
Sent: Saturday, October 30, 1999 7:38 PM
To: Bruno Clavier; 'Bob Rood'
Cc: Fakatselis, John; Willingham, J B Bartow; Abrahams, Richard
Subject: RE: 2Mb Processing Gain for Samsung

Guys,
The theoretical Es/N0 for the 2 Mbps QPSK mode is derived as follows.
We start with the standard BPSK result of 9.6 dB Eb/N0 for 10e-5 BER in AWGN.
This is well supported in the literature.
To that we add 0.7 dB to account for the doubling of errors due to differential coding and the further tripling of errors due to descrambling. The self synchronizing descrambler used by IEEE 802.11 creates three errors for every 1 error input.
Then we add 3 dB to go from BPSK to QPSK, resulting in 13.3 dB.
Now we can add the 2 dB for implementation loss arriving at 15.3 dB for the purposes of the SNR for the CW jammer test.

Carl

> -----Original Message-----
> From: Bob Rood [SMTP:rrood@intersil.com]
> Sent: Friday, October 29, 1999 3:19 PM
> To: bclavier@rheintech.com
> Cc: Fakatselis, John; Willingham, J B Bartow; Abrahams, Richard;
Andren, Carl
> Subject: 2Mb Processing Gain for Samsung
>
> Hi Bruno,
>
> Please find the attached zip file containing the 2Mb processing Gain
> results for the HWB3163 PrismII reference design radio. The Processing
> Gain at 2Mbps is Gp = 12.5dB for an Es/No or (S/N)o = 13.3dB. Carl
> Andren will provide the theoretical basis for this calculation on
> Monday.
>
> Bob Rood
> Oct 29, 1999 << File: 2MbPG.zip >>