TCB Comments – 5-24-06

1) Some confidentiality Letters provided to not list the operational description. Please confirm and correct if this is desired to be considered confidential as well.

> The long term confidentiality letter states the operational description was to be kept confidential; therefore it is not necessary to request short term confidentiality.

2) The text response to the comments was labeled as confidential. Please note that this is not allowed. If information in the response is considered confidential, it should be provided as a separate exhibit (i.e. theory, etc.) and referenced as appropriate from the response. Please comment.

> Comment accepted. Please keep the operational description confidential.

3) An updated report as referenced in previous comment 12 and 13 does not appear to be provided. Please review.

> The updated reports were submitted. Please see the attached report.

4) The operational description and users manual mention an output power of 10 dBm. However maximum measured power appears to be about 15 dBm. Please explain and/or correct as necessary.

> The +10 dBm number is the maximum average output power. The maximum peak output power of about +15 dBm was measured during testing. Please see the notes for the input/output comparison of the updated Product Description. Also, see the updated Specification Summary of User's Manual.

5) While the discussion provided mentions the device does demodulate/verify incoming TX prior to retransmitting, this does not appear to be addressed elsewhere in the application. Please confirm that the device functions in this manner and as described in the FCC discussion provided. Please provide a brief discussion of how this is accomplished if the internal modulations appear to only be subsets of the modulations repeatable. If this is considered confidential information, please add a supplement to the current confidential information to explain this.

> Please see paragraph 6 of the updated Operational Description

6) For Radiated spurious emissions, it is uncertain if this was performed using internal modulation or repeated modulations. Both must be compliant. Have both been investigated? Is the worse case reported?

> The worst case internal modulation was reported for the internally generated signal case. The worst case DSSS and OFDM modulations were reported for the repeated signal case.
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> For radiated Spurious emissions test using DBPSK modulation, both internal modulation and repeated signal case were investigated, worst case results are placed in the test report.
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> Radiated Spurious emissions test using OFDM and DSSS modulation, both internal modulation and repeated signal case were investigated, the worst case results are placed in the report.

7) If the output is not fully regenerated and operates off an AGC amplifier, typically the FCC desires emissions to be checked with minimum and maximum input levels into the AGC circuit as the variable gain may affect spurious emissions. Has this been performed? Have worse case emission been reported?

The input signal level used was -68 dBm. This was the worst case for the EUT. This makes sense since the variable gain amp (VGA) is near the maximum usable gain of the AGC. Any spurious signals present at the VGA input will be amplified the most at this setting. Spurious signals leaking into the input of the other amps (the remaining amps are constant gain) will experience fixed gain as a function of input level.

8) Please explain how the device handles an output if the input is > -40 dBm specified for input levels.

At -40 dBm, the receive amps start to saturate. This does not affect out of band levels since the SAW filters heavily attenuate the out of band products (3rd order products, etc.). However, the signal on the detection and demodulation path starts to degrade due to the saturation. As the signal level continues to increase, the matched detection filters performance degrades. The detectors fail to detect packets and disables the transmit path more often. The VGA circuit provides attenuation as well as gain so the output power level remains at +10 dBm, if a packet is detected.