



Memo

No.: memo110
To: Timothy Johnson ATCB.
From: Roland Croteau, Bay Computer Associates, Dick Wiedeman Test Site Services.
CC: Mary Ellen Heinen,
Date: July 15, 2005
Re: Response to Comments relative to FCC submission S5Y1234

Tim

The following is our combined response to your comments relative to our submittal for the Pepper Wireless Pad FCC ID: S5Y1234.

Comment 1 Answer : A FCC confidentiality cover letter with the appropriate clause had been originally uploaded per the ATCB sample I had received. Please let me know if this document is unacceptable for some reason.

Comment 2 Answer : The 802.11 (Wifi) device, and bluetooth component are OEM components integrated within the Pepper Pad. We have enclosed a copy of the pertinent section of the Pepper Wireless PAD top level and PWB Bill of Materials to convey this fact. Block Diagram information is proprietary to Gemtek and Infineon. Information concerning the Gemtek device can be found on the FCC site per FCC ID : MXF-F910131.

Comment 3 Answer : The 802.11 (Wifi) device, and bluetooth component are OEM components integrated within the Pepper Pad. We have enclosed a copy of the pertinent section of the Pepper Wireless PAD top level and PWB Bill of Materials to convey this fact. Block Diagram information is proprietary to Gemtek and Infineon. Information concerning the Gemtek device can be found on the FCC site per FCC ID : MXF-F910131.

Comment 4 Answer : Internal photos displaying the location of the internal transmitters and antennas had been included in the SAR test report. We have now duplicated this photo in the internal photo document entitled "Pepper Pad Internal photos_V02". Which has been uploaded to the ATCB website.



- Comment 5 Answer : You are correct that the computer portion of this device is being done via a DoC response. We were unclear in this case, what was expected in section 4 a). A new version of form 731 has been uploaded to the ATCB website.
- Comment 6 Answer : It is correct that the Wifi portion is being handled as a DTS device and the Bluetooth portion as a DSS device. Form 731 has been update accordingly.
- Comment 7 Answer : We have uploaded all product photos in a single document called "B05143_photos".
- Comment 8 Answer : This is a typo and was corrected in the Bluetooth report; ANSIC63.4-2003 is the governing document used.
- Comment 9 Answer : The antenna port on this product is not accessible and the antennal gain is not known. Therefore our procedure in these cases is to measure EIRP using the substitution method. This is primarily because the far field equation methods in the guidance documents require an antenna Gain number which is unknown for this product. The EIRP substitution method used is a worst case method as the value determined is then further corrected by the 26 dB bandwidth of the emission which assumes a rectangular power distribution over the entire 26 dB bandwidth of the measured signal. Please see pages 16 and the notes on page 17 in the report for the sample calculations Also see the plots on pages 18-20 used to determine the 26 dB bandwidth used. for the calculations.
- Comment 10 Answer : Pre-testing was performed with the EUT flat on the table for each radiated test configuration to verify that the final test position chosen (on its built-in stand at approx. 45 deg.) was worst case or no change. Only the highest points relative to the limit for the intentional and unintentional frequencies are investigated for this determination and used as the basis for the on-going tests. In the case of this product, no significant changes were noted based on the EUT lying flat or oriented in its normal table top position. All faces of the product were thus investigated before the final orientation was chosen.
- Comment 11 Answer : The SA Reference values were taken manually on the HP8566B spectrum analyzer and are uncorrected peak values taken with a 1MHz. RBW=VBW, span=0 and with the EUT emissions maximized. These reference values do not appear in any other data sheets other than the table on p. 16 Further they do not take into account the effect of the external 6 dB pad as it was used for both the reference and substitution measurements and is not relevant to the absolute value. (ie, these values were not taken from the plots.) . This was the value that was then used as the target value when the substitution antenna/sig. gen. was put in place of the EUT. Please see page 15-17 of the report for additional explanation on the procedure. The plots are shown *only* to determine the 26 dB bandwidth and not intended to correlate with the amplitude measurements mentioned; further, the orientation and distance of the EUT to obtain the plots



was not necessarily the same as that determined for the SA reference measurements.

Comment 12 Answer :Regarding the lower band edge determination, the delta method was used whereby the difference (in dB) between the carrier peak and the nearest emission just outside the band is determined from the plot. This delta value is 31 dB. The corrected peak value of the carrier for ch.1 is taken from the table on pg 31 of the report and is 75.1 dBuV/m.

$1\text{dBuV/m} - 31\text{dB} = 44.1\text{dBuV/m} + 6\text{dB(Ext. pad)} = \mathbf{50.1\text{dBuV/m (peak)}}$
(The value we listed on page 11 of the report is 52.25dBuV/m and will be corrected accordingly)

Regarding the upper band edge determination, the same delta method is used and the delta determined to be 39 dB.. The corrected peak value of the carrier for ch.11 is taken from the table on pg. 33 of the report and is 69.2 dBuV/m

$69.2\text{dBuV/m} - 39\text{dB} = 30.2\text{dBuV/m} + 6\text{dB(Ext. pad)} = \mathbf{36.2\text{dBuV/m(peak)}}$
(The value we listed on page 11 of the report is 38.2 dBuV/m and will be corrected accordingly)

See pages 31 and 33 for the correction factors used (cable loss, antfac, preamp, etc.) for the base measurements referred to above.

Please note that both of the band edge measurements are peak values and meet both the required average limit of 54 dBuV/m and the implied peak limit of 74 dBuV/m.

Comment 13 Answer :The conducted emissions data presented was taken at 120VAC/60Hz.. The radiated emission data was taken with the wall adapter power supply at 230VAC/50Hz. As the output of this adapter and, therefore the input to the EUT is a regulated 5VDC, it was determined that this would not affect the radiated emissions. Generally, FCC allows radiated emission testing to be performed at 230VAC/50 Hz as long as a universal supply that covers the entire voltage/freq. range (including 120VAC/60Hz.) is used and no switch settings or other modifications need to be made in order to run either voltage. This is typically done for unintentional radiator data only for efficiency reasons.

Comment 14 Answer : The 3Hz.VBW measurements shown on pages 31 and 33 are typos and will be corrected accordingly. These RBW and VBW data are entered manually on the spreadsheet.

Comment 17 Answer : Intermod verification was performed and the appropriate statement made in the Bluetooth report.



Please do not hesitate if any further information is needed from either Dick or myself.

Regards

Roland Croteau
Director of Systems Engineering
Bay Computer Associates

Dick Wiedeman
Lab Technical Director
Test Site Services, Inc.