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AMERICAN TCB

6731 Whittier Ave.
McLean, Virginia 22101
Att: Tim Johnson

Re: **RESPONSE TO ATCB COMMENTS ON APPLICATION, ATCB004610**

1) As used, this is not an amplifier (see provided guidance). This appears to be a in-vehicle booster.

Answer This is informational and does not relate to compliance or non-compliance. We have changed the literature to show the unit in use in a home and boat as well as a vehicle. We have also provided prior grants of the same type of unit listed as an amplifier.

2) The labeling for FCC appears to show a dash that is not present on the 731 form. What is the correct FCC ID Number for this certification. Please correct affected exhibits.

Answer The label has been corrected and the new data is being uploaded to the ATCB website.

3) The model number on the IC form and the label do not match. The form cites IVWAA819 while the label appears to show IVWA-819. Which is correct. Please correct affected exhibits.

Answer The label has been corrected and the new data is being uploaded to the ATCB website

4) Please provide test photos as a separate exhibit.

Answer The new data is being uploaded to the ATCB website

5) Users manual shows external antenna as maximum of 7 dBi. RF exposure mentions "6 dB in all cases". Additionally, please note that dB is not a unit. This could be dBi, dBd, etc, which each has a different gain and yield different results. Additionally, 7 dBi would also yield different results. The RF exposure and users manual must be clear. Please correct as necessary.

Answer The RF exposure calculations are now made with 6dBi antenna – all cases.

6) AMPS is typically F1 D and F8W. Please clarify and correct any affected exhibits as necessary.

Answer The new data is being uploaded to the ATCB website

7) The manual shows 4 different antennas. Please provide antenna gain information on these antennas.

Answer The manual has been corrected and the new data is being uploaded to the ATCB website

8) Regarding gain control given in the tune up exhibit, please provide further detail as to what target levels

and maximum gain levels are being used to trigger an output level reduction. If this information is considered proprietary, please revise the current tune up procedure exhibit to details this.

Answer The tune up procedure and gain control document has been updated and the new data is being uploaded to the ATCB website.

9) Please explain how output power behaves. I.E. fro GSM 800 MHz an output of 0.785 W was shown. What happens when 2 carriers are present? If this affects total output power, then RF exposure must be adjusted as well (in addition to 15 below).

Answer There is no affect on the total output power increasing. The total output power is limited internally, if more than one channel is present and the amp "overdrives" it begins to "roll" off and no further amplification is possible.

10) Page 45 of the report cites the following which does not appear appropriate to this device:

Inter-modulation test are required for the downlink only as this device is a single use channel device and is to be dedicated to one phone, therefore only one channel uplink can be active at any given time.

Answer This statement has been removed from the report. Plots for both uplink and downlink were provided.

11) Plot on page 65 of the test report is for middle channel, but should be for low channel. Please correct.

Answer Correct plot has been inserted

12) Plots on page 106 & 107 appear incorrect. Please review.

Answer These plots are correct. Plot on page 106 is for the occupied bandwidth, plot on page 107 is the input plot, and plot on page 108 is the output plot.

13) Please document the input drive levels for both uplink and downlink. Additionally, please justify the maximum input rating and maximum gain settings for all tests.

Answer For all measurements the maximum signal was determined by input the signal until the unit would no longer amplify the signal. This signal has been plotted in the section as modulation characteristics as input (EUT removed form circuit) and output (EUT inserted in circuit). This device has no gain settings.

14) Please confirm device cannot operate in saturation. Please justify means to control maximum power and to assure linear operation. I.E. How is saturation or over-modulation prevented for signal inputs, especially pulsed emissions (i.e. GSM/TDMA)?

Answer Refer to the revised Tune Up and Gain control document being uploaded now.

15) Uplink and downlink appear to operate simultaneously in both bands. RF exposure should show that the combined RF exposure meets the appropriate requirements. I.E. Level1/Limit 1 + Level2/Limit2 < 1 (i.e. < 100 % of limit)

Answer RF Exposure updated and new RF exposure being uploaded to the site now.

16) FCC requires intermodulation testing for most modulations. See attached. Currently testing appears to only cover GSM and AMPS per the FCC guidance.

Answer GSM plots represent worst case configurations for inter-mod test as they drive the output "harder"

than any other modulation input.

17) Antenna conducted spurious appears to possibly not cover AMPS – see attached guidance note as well.

Answer In accordance with FCC 2-11-04/EAB/RF FM (GSM) can be used to show compliance with AMPS requirements.

18) Please confirm the input signal(s) used into the device for spurious radiated testing. Was this CW as expected by the FCC guidance?

Answer Yes

1) FYI IC has expressed concern about certain types of cellular devices under RSS-131. Therefore we have not fully review this application under RSS-131 yet. We are awaiting comment from IC regarding the allowance of this type of device under IC regulations. We will provide further information as it is obtained.

I have been informed that IC has answered this question

2) The test report does not appear to show compliance at the band edges for all modulations (i.e. – see plot on 64 as an example – note this is only one of several examples can be cited). Test signals used appear to be centered on the band edges, rather than completely within the authorized band blocks, and appearing to cause out-of-band emission noncompliance. Note this fact has caused dismissals with the FCC before.

Answer Compliance with band edges are shown on plots 46,52,55,61,64,70,73,79,82,88,91,97,100,103,109,115,118,124,127,and 133. Band edges should be look at on the plots labeled occupied bandwidth as these are in the resolution bandwidth that should be used. The modulation input versus output plots are at a greater res bandwidth that makes it “appear” that the signal exceeds the band edge but it does not when looked at with the correct res bandwidth. This has been the way it was done in previous submittals.

Plots are center on channel and Marker 1 indicates band edge and amplitude at band edge. –13dBm limit at band edge was maintained.