

American TCB

September 21, 2007

RE: FCC ID: SHD-A9YWFS

Attention: Timothy Johnson

Please find our responses to your comments on this application below:

1) Due to various concerns recently seen about proper authority being given to others for FCC and/or IC matters, the agency letter and/or confidentiality letter should be signed by someone traceable to have the proper authority. For instance, the FCC site shows Bob Hymes as the correct contact of authority for FCC matters. Therefore the agency letters should be signed by this contact or alternatively a letter showing who he has "deputized" (i.e. Roy Harlin/Hans Hartmann) to sign on his behalf may be provided as well. Please correct.

See provided letter.

2) Please note that the 731 states the operating frequency for the DTS is 2412 to 2467MHz. Please note that for this type device the FCC limits the range of operation to 12 channels between 2412 to 2462MHz. Please correct the 731 and any other documentation to reflect the appropriate frequency range for this type device.

See revised ATCB 731 and IC forms.

3 Some cover letters have information removed by using boxes to cover which can be moved or adjusted. Please correct the letters by deleting the information as appropriate.

See the revised letters.

4) If the setup and external photos are to be part of the STC please note that the device can still be seen in the SAR report. If the setup photos are to be part of the STC, please remove them from the SAR report and provide them as a separate exhibit.

The revised STC does not request that setup photos to be held confidential.

5) Short Term confidentiality in the main letter is referencing additional documents not shown in the short term confidentiality letters. This information should be consistent. It may be advisable to simply reduce the phrasing in the main letter to remove all mention of certain exhibits and simply cite that short term confidentiality is requested separately.

See the revised STC letter.

6) For unlicensed devices approved as an entire device, the FCC desires pictures of the top and bottom of all boards in the device. It appears that many photographs are missing. Please review.

See additional photographs.

7) For IC the model number must match as listed. Currently the label provided cites 2000, while the model on the IC form cites 2042. Please review and correct documentation as necessary.

See the revised label diagram. The IC form was correct.

8) The information suggests that the label is located underneath the battery. However the exhibit which shows location appears to be on the outside of the device. Please provide a better exhibit to clearly show label placement.

See the revised label diagram. The label is located underneath the battery, as surmised. Included in the application was a request to have the label under the battery. This was approved by the FCC in the previous version of the OQO device. Correspondence to this affect was included in the original submittal documentation.

9) The FCC label letter provided mentions that this device is identical except for changes to the EVDO revision number. This device does not appear to contain EVDO. Please review.

See revised letter.

10) Bluetooth Operational description (page 9) cites +6dBm while the measured output is about 1 mW (6 dB lower). FCC expects the device to be tested at maximum output power. Please explain/review/correct as necessary.

The output of the Bluetooth radio is limited to the level measured during testing, approx 1 mW. While the chip is capable of higher power, the OQO device limits the BT operation to Class 3 operation, as noted in the OQO Theory of Operation.

802.11 b/g items

11) Should the last note on page 35 of the test report be note 3? Otherwise table isn't clear.

Corrected.

12) Although 10 Hz is allowed as a average detector for average measurements falling in restricted bands under 15.247, for average plots on pages 47, 48, 52, 53, 67, 69, 72-73 typically a peak detector (not sample) are used for spurious restricted bands measurements. This fact may affect results as reported. Please review/correct.

The plots presented in the test data are there to identify the location of the highest emissions, near or outside the band. No final readings are taken from the plot. The final measurements are taken using a peak and average detector, as noted in the tabular data.

13) Average power techniques were applied to 802.11b/g – therefore pages 44-45, 64-65, and 85-86 should use –30dBc.

The 802.11b power measurements were taken peak, therefore -20dBc was correct. The power for 802.11g and the 802.11a (5725-5850MHz) was taken average. The test data and report have been revised appropriately.

14) Average power techniques were applied to 802.11b/g – therefore page 47, 52, and following data tables should use –30dBc (i.e. limit of 62.4 dBuV/m/ -65.5 dBuV/m).

The 802.11b power measurements were taken peak, therefore -20dBc was correct.

15) FYI...In the future, kindly reference the appropriate power and PSD methods applied from FCC KDB 558074.

Noted.

16) FYI...It appears that power techniques for 802.11 are average, while the PSD was done using peak. Note that FCC KDB 558074 specifies specific PSD measurements depending on the power methods applied. Please take care in the future to observe this. Since current PSD method is considered worse case, further action on this item is not requested at this time.

Noted.

17) Page 12 clearly states that no modifications were made. However other pages in the report (i.e. page 32) shows specific modifications necessary. Please review/correct as necessary.

The report has been modified to note the modification.

18) Sections where power levels were reduced to meet requirements should also be considered as modifications (i.e. manufacturer must set maximum level to ____).

Elliott does not consider these to be modifications, since we are typically working with a prototype and unique software that allows for a much wider range of power settings than what will be available during normal use. The power levels noted for compliance are indicated on the individual test sheets.

19) The operational description clearly denotes the chip set having SUPER AG mode. This typically must be investigated as well as in some systems this affects the envelope, modulation, etc. Please review.

The OQO device does not currently support the Super AG mode. This is included in the theory of operations.

UNII

20) Although 10 Hz is allowed as a average detector for average measurements falling in restricted bands, for average plots on pages 94-95 & 97 - 98 typically a peak detector (not sample) are used for these restricted bands measurements. This fact may affect results as reported. Please review/correct.

The plots presented in the test data are there to identify the location of the highest emissions, near or outside the band. No final readings are taken from the plot. The final measurements are taken using a peak and average detector, as noted in the tabular data.

21) Page 105 contains updated data for a modified device. Power settings are not documented. Please correct.

Revised.

22) For IC: Please note that RSS210 Section A.9 additional requirements state that operation in the frequency range between 5600-5650 MHz is not allowed. The IC application and test data shows the device is listed as operating between 5.5-5.7GHz. Please provide evidence as to how the 5600-5650 MHz range is disabled so the transmitter cannot operate in that range. Please include information on how the user cannot make the device to operate in this range either.

The 5475-5725 MHz band has been removed from the application.

Bluetooth

23) Dwell time on page 135 is miscalculated. Please review.

See revised data.

24) Bluetooth bandedge measurements do not appear to be provided.

See revised data.

25) Theory/Operational description states that the device supports Bluetooth V2.0. Note that this revision allows for additional higher data rate Bluetooth which operates with a wider envelope (approx. 1.25 MHz 20 dB bandwidth) and therefore requires additional testing (i.e. power, bandwidth, bandedge, spurious, etc.).

Additional test data is included to include the EDR mode.

26) Corrected output power tables do not appear to be provided. Please provided as it is uncertain if the plots provided are corrected for measurement.

See revised test data. The plots represented the corrected output power measurement.

MISC

27) It appears that 15.207 is mislabeled for many restricted band references in the front of the report.

Corrected.

28) 15.207 data was not provided (AC powerline emissions DURING TX). If this device can TX while attached to an AC adapter, these results must be provided.

Report revised to include the AC conducted data.

29) Test photographs show the device positioned much higher than required for tabletop equipment as required by ANSI C63.4. Additionally AC powerline emissions photos should be provided if applicable. Please review.

Corrected. The photographs showed the EU setup that was also being performed.

30) Users Manual appears to be missing the following information per IC RSS-210: In addition, users should also be cautioned to take note that high-power radars are allocated as primary users (meaning they have priority) of the bands 5250-5350 MHz and 5650-5850 MHz and these radars could cause interference and/or damage to LE-LAN devices.

See revised manual.

31) Please note that while the operational description states that the concurrent transmit does not occur. Please confirm that the 802.11 a/b/g does not function at the same time as the BT. Many times devices such as this are expected to communicate via headset with BT while connected to VOIP via WLAN.

The BT can transmit at the same time as the 802.11abg radio. The SAR testing was performed in the worst case configuration of all radios transmitting simultaneously.

DFS

32) This device is stated in the DFS report to be a client. However a client can still have radar sensing capability. If so, then this application must go to the FCC. Please explain.

This is a client without radar detection. The DFS report has been modified for clarity.

33) Please confirm if this device contains any “ad-hoc” modes or “peer-to-peer” modes. If so, then note these modes are considered as a master device.

See revised theory of operation. The device does not support “ad-hoc” modes.

34) 30 minute non-occupancy plots do not appear to cover 30 minutes. Please explain.

The plot in the DFS report was generated using a spectrum analyzer with a max hold trace. The maximum sweep time of the analyzer is 40 seconds. The analyzer was set into a continuous sweep mode for 30 minutes before the plot was captured. The sweep was started immediately after a channel closing event.

35) For DFS applications, the FCC has asked that the application include how DFS software security is – February 2007 TCBC training.

The DFS function is a combination of the driver and the firmware. The basic functions, like DFS, are not available to the end user.

I was at the TCBC training in February 2007 and don't remember any comments related to software security, other than noting the software version used in the EUT in the test report.

SAR

36) SAR Report appears to show information regarding WWAN, 850 MHz, 1900 MHz, Part 22, & Part 24. If this is not applicable this information must be removed from the SAR report. The FCC is particular about SAR reports not including additional or FYI type of testing. The report should reflect only the device as certified. Note that currently 850 and 1900 MHz was ignored. Please adjust.

See revised SAR report. Additional testing was performed on the model 2042.

37) Please note that it appears the SAR lab incorrectly used the IEEE target reference values instead of the FCC required dipole antenna target values for system accuracy testing. Please correct the system verification (accuracy) data to properly show the target references as obtained from the Dipole antenna used. This includes permittivity, conductivity and ref SAR. Please refer the FCC KDB and the FCC SAR probe and dipole calibration document released in Jan 2007.

See revised SAR report.

38) Probe tip distance to phantom inner surface should be < 8.0 mm for 2.4 GHz and < 2.5 mm for 5 GHz. This could not be confirmed. Please explain.

See revised SAR report.

39) 5 GHz SAR requires finer resolution and different scanning volumes than 2.4 GHz. For instance, scan volume should be 24 x 24 20 mm³ or larger for 4.5 – 6.0 GHz. Earlier recommendations also included resolution for x/y should be < 4.5 mm and z < 2.5 mm. It does not appear sufficient resolution was utilized per FCC requirements and that these requirements were not met. See attached.

See revised SAR report. The EUT was retested using the correct scan volume.

Regards,



Mark E Hill
Staff Engineer