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18 October 2006

FCC: RUNZU
IC: 6221A-ZU
ATCB: Comments 101106

In response to your comments dated 11 Oct 2006 regarding the application for certification of the devices referenced above please find our responses below:

1	Confidentiality has not been requested. Please confirm this is not required.
Reply	***Confirmed. Confidentiality is detrimental to client needs per Comment 10.***
2	Give the approval under 15.247, the users manual should state the following or similar: "The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter."
Reply	***Antenna warning added to user manual, uploaded for review.***
3	Users manual should include information for 15.105 and 15.21. Please update.
Reply	***Part 15 Class B standard warning and modification warning added to user manual, uploaded for review.***
4	Please justify the test site used for > 1 GHz. It appears an OAT's was not used.
Reply	***Report incorrectly stated the PTI OATS was used for all emission tests. Test report has been revised to correctly identify the actual test site.*** ***The indoor lab area is used for > 1 GHz measurements. Test distance is always 1 meter or less. Path losses for non-incident waves above 1 GHz will exceed 22 dB. The directivity of horn antenna beamwidth is typically 30 degrees for most of the 1 to 18 GHz range. To mitigate effects of the plywood material in the turntable, the EUT is placed above the wooden turntable on a 8 cm thick foam insulator and the horn position adjusted accordingly. This combines for acceptable emission measurement conditions.***
5	To measure power, the RBW must be > 6 dB measured bandwidth. It appears that a smaller RBW was used. Please explain/correct as necessary.
Reply	***Agreed, measurement bandwidth was incorrect. New measurements at 3 MHz RBW/VBW taken. Amended test report and other affected documents revised and uploaded for review.***
6	It does not appear that values are calculated for the bandedge. Please review.
Reply	***Test report amended accordingly. Includes radiated measurements taken of band edges in the added Adjacent Restricted Band test data.***
7	FCC requires compliance to BOTH peak and average limits. Please note that the reading at the 3rd harmonic appears to be over the limits. Limits at 3m are 74 dBuV/m Peak and 54 dBuV/m Average. You can not simply compare average readings to the peak limit.
Reply	***Measurements retaken with peak & average detection and reported amended accordingly.***
8	How is this device being handled as a PC peripheral? This device appears to be capable of USB connection to a PC and is therefore also considered a PC peripheral device (in addition to the TX requirements, i.e. Part 15.247, etc.) and is subject to either a Certification or DoC as a PC peripheral. Therefore the application must clarify if you are asking for: a) Certification of the device as a TX, and a DoC has been performed by an appropriately accredited test lab for a PC peripheral b) Certification as a TX + PC peripheral. Note 1: The option b) would be considered as a composite application and 2 certificates (one for the TX, one for the PC peripheral portion) would be issued. Note that there are additional review costs associated with this additional certification. Note 2: To qualify to perform DoC applications, the test lab must be accredited (i.e. NVLAP or A2LA) to perform testing under the DoC procedure. Note 3: Note that for DoC tests, the device is configured with a minimum test configuration as specified by ANSI C63.4 which includes complete computer + 2 I/O devices attached (one may be the EUT) during this particular test. Test photos do not currently support a PC Peripheral device test. Note 4: Each path (DoC or Certification) has particular labeling requirements that must be followed. For DoC authorizations, the label should also include specific DoC labeling information and also the users manual should include information regarding Part 2.1077. If the device is Certified, the FCC ID and current labeling requirements for the TX will cover the labeling requirements. However, additional grants are generated and review costs are higher. Currently labeling and users manual do not appear

	to support a DoC. The manufacturer does have a choice of DoC or Certification, however the device labeling and manual information must match the appropriate methods used.
Reply	***Certification is for the transmitter. Peripheral aspect is DoC and laboratory is NVLAP accredited to perform DoC testing. NVLAP Lab Code: 200062-0. Labels & user manual are amended accordingly and uploaded for review.***
9	FYI….It is assumed the device is also tested as a PC peripheral under a DoC authorization. Please note that for DoC tests, the device is to be configured with a minimum test configuration as specified by ANSI C63.4 which includes complete computer + 2 I/O devices attached (one may be the EUT) during this particular test. Test photos currently do not cover a correct PC peripheral device configuration, so please ensure testing has been properly performed.
Reply	***Noted. Thank you.***
10	FYI…This device appears odd and it is uncertain what it's purpose will be (development only, etc.). It almost appears modular in nature, but doesn't meet FCC modular requirements (i.e. modular approval letter, shielding requirements, etc.). Additionally it does not appear to be an end use device since it does not incorporate a case and therefore not available for the general public. Generally something of this nature (a board like design) that is not modular can only approved as a development device. Note that even development devices were not allowed to be Certified until recently as well. Given the explanation given in the operational description, this application will only be reviewed assuming the device is for development purposes only.
Reply	***Acceptable. This device is a demonstrator of Freescale ZigBee chip technology.***
11	FYI: Proposed Grant Notes: Power Output is Conducted calculated from Radiated measurements. This equipment is for use by developers for evaluation purposes only and must not be incorporated into any other device or system. This device may not be sold to the general public. The antenna used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. End-users must be provided with specific operating instructions for satisfying RF exposure compliance.
Reply	***Acceptable. RF safety warning added to revised user manual and is uploaded for review.***
12	Labeling does not appear to show IC information. Note that to meet IC requirements, the label must include 3 items: a) IC Certification Number preceded by "IC:" (sample is missing ":"), Model number as certified (does not quite match exactly), and applicant under which certificate is issued. Please correct.
Reply	***Artwork of IC number syntax revised to add the ":" character. IC application form revised to more closely agree with EUT markings. (Note that the MC1319x imprint refers to the radio chip family.) Test report applicant name and EUT name revised accordingly.***
13	Please note that IC requires RX emissions to be tested as well. Please explain if the testing provided covers this.
Reply	***RX mode not available, EUT transmits continually seeking its companion sensor device. Transmit duty cycle is low such that most of the transmit activity is actually receiving.***
14	Bandwidth for the IC form should be the 99% bandwidth measured following methods specified in the previously provided document, or as provided by a spectrum analyzer for 99% bandwidth. Please review.
Reply	***New bandwidth measurements referencing wide RBW peak power added to revised report and uploaded for review.***

Eric Lifsey

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