



American Telecommunications Certification Body Inc.

6731 Whittier Ave, McLean, VA 22101

February 11, 2006

RE: Hong Kong Primex Asia Limited Shenzhen Representative Office/Amoi Electronics Co., Ltd.

FCC ID: RG3-WGPS900M02

After a review of the submitted information, I have a few comments on the above referenced Application.

- 1) Information on the 731 cites a frequency range of 902.1 – 925.62 MHz and the test report shows 902.1 – 925.6 MHz (pages 5, 7, & 8) and test of 79 channels (902.1 – 925.58 MHz). The frequency list provided cites 902.0964 – 925.50504 MHz. What is correct? Please correct all affected exhibits as necessary.
- 2) This application should also include an appropriate RF exposure exhibit if the device is approved under 15.247. See attached example which would likely apply in this case.
- 3) Information in the test report (section 4.9), operational description, and users manual mention using an SMA-K joint connector. I am not familiar with "SMA-K" connector and can not seem to easily find information on the internet regarding what this is. However it appears to possibly be a standard type SMA connector. This would not be in compliance with 15.203. To meet the FCC requirements of 15.203, this would need to be reverse-polarity or reverse-sex connector. Please provide further information as necessary. Also, this may require updating affected exhibits to clarify as well.
- 4) Specific information on how the 15.247 TX meets several requirements has not been provided. Frequency Hopping Systems approved under 15.247 require detailed theory of operation to cover the following information below. For instance, a) is not simply answered with "random". A sample pseudo-random list that would actually be generated needs to be provided or complete detail on how the list is generated.
 - a) pseudo random sample hopping list and how the pseudo random channels are selected.
 - b) description of system receivers and how they have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and how they shift frequencies in synchronization with the transmitted signals
 - c) Timing information of the system and how it meets equally on the average requirements. In addition, during absence of data, how does the system behave. It should always either continue to hop, or stop and start on the next frequency in the hop table. The device should not start back at the first channel in the hop list.
 - d) How the device meets 15.247(g) and (h).
 - e) If the system has different modes of operation that affect the above, the theory should cover each of these as well (i.e. different timing, data rates, etc).
 - f) Comments further down mention the possibility of approving under 15.249. Please review remaining comments carefully. If 15.249 is used, the information given here is not necessary.
- 5) For Receiver emissions: When radiated Peak emissions exceed Average limits, FCC requires both peak and average data to be shown. Also, please note that many readings are shown as average only. In these cases we require peak. Also, please note that TX duty factor is not typical applicable to RX emissions. A duty factor based upon evaluation of any pulsing of the RX if applicable must be applied, not the TX. This may require evaluating each emission separately with peak and average detectors. Once finalized/corrected radiated emissions will need to be reviewed again in entirety due to the various concerns cited here and to follow.
- 6) Page 27 & 28: 1777 MHz is not 20 dB below fundamental measurements and also exceeds peak and average limits which therefore exceeds FCC requirements. Please review.

- 7) Page 30 & 31: 1812 MHz is not 20 dB below fundamental measurements and also exceeds peak and average limits which therefore exceeds FCC requirements. Please review.
- 8) Page 33 & 34: 1846 MHz is not 20 dB below fundamental measurements and also exceeds peak and average limits which therefore exceeds FCC requirements. Please review.
- 9) Other TX emissions are still difficult to review. Please provide appropriate peak and average measurements for all readings so appropriate review can be performed. Using the duty factor shown, some measurements still appear over peak or average limit. Please provide all information for appropriate evaluation.
- 10) FYI....NOTE: Due to number of issues to review in test report, complete review of test report will be necessary upon correction.
- 11) Test data is showing 600 msec dwell/TX time per 20 seconds. This exceeds the maximum 400 msec limit. Please note that the 400 msec is a time of occupancy per channel (TX + RX), which would appear to be 600 msec. Please review.
- 12) Information in this application suggests an output power of 5 dBm. However results of power shown almost -13 dB below this. Was the device functioning properly? Was the setup properly corrected for cable loss during the measurement? Given the specifications of the module compared to the results, it appears that there is a concern with either the test method or test sample. Please review. However, if power is much lower than 0 dBm, it may also be possible to approve this device using 15.249. This will eliminate the need to provide all the theory shown above, but will require all emissions to meet 74 dBuV/m - Peak and 54 dBuV/m – AVG regardless of the frequency measured. Only 15.247 requires restricted bands to meet these limits, but other transmitters must meet these levels for ALL spurious emissions. Additionally 15.247 only requires a 20 dB down on the bandedge of 902-928 MHz, but 15.247 would be required to meet the general radiated measurements. This may be a problem at 902 MHz.
- 13) If approving to 15.247, Current bandedge emissions are shown with too large a span to ensure proper compliance at the bandedge. Please provide a bandedge plot with 902 and 928 MHz shown in the center of the screen with a 10 MHz span or less and the closest channel to the bandedge. Please use RBW = 100 kHz, VBW >= RBW. This should show > 20 dB down from fundamental at bandedge. If 15.249 is used instead of 15.247, please note that radiated emissions at bandedge must be performed and meet general radiated levels.
- 14) Since AC power feeds the 72 MHz sender unit via a 9VD adapter, AC emissions through the 72 MHz sender unit are still applicable. Please review 15.207(c) carefully.
- 15) ANSI C63.4 typically requires typical length cables to be attached to all ports or at least a nominal 1 meter length. Has prescans or evaluation of this device been done to determine how a normal cable length will affect the radiated results. The manual suggests a typical > 1 meter cable will be used. Please review.



Timothy R. Johnson
Examining Engineer

[mailto: tjohnson@AmericanTCB.com](mailto:tjohnson@AmericanTCB.com)

The items indicated above must be submitted before processing can continue on the above referenced application. Failure to provide the requested information may result in application termination. Correspondence should be considered part of the permanent submission and may be viewed from the Internet after a Grant of Equipment Authorization is issued.

Please do not respond to this correspondence using the email reply button. In order for your response to be processed expeditiously, you must submit your documents through the AmericanTCB.com website. Also, please note that partial responses increase processing time and should not be submitted.

Any questions about the content of this correspondence should be directed to the sender.