Washington Laboratories, Ltd.
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August 2, 2006

Mr. Tim Johnson
American Telecommunications Certification Body Inc.
6731 Whittier Ave
McLean, VA 22101

RE: Comments of July 26, 2006
APPLICATION: H9PMC9090R6 Symbol Technologies, Inc.

Dear Mr. Johnson:

Below are the comments that you have provided regarding the application for certification
referenced above. Our responses to those comments are in **bold italic**. Many responses refer you
to additional exhibit(s) which has been uploaded to the application folder at the ATCB website.

Thank you for your attention. Please feel free to contact us for any additional information that
you may require.

Regards,

Gregory M. Snyder
Chief EMC Engineer, Wireless/Telco Services Manager

Brian J. Dettling
Documentation Specialist   WLL Project: 9261

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1) FYI…..The Bluetooth report is actually for DSS, not DTS. Therefore the grants will reflect this
appropriately.

R. Acknowledged. Thank you.

2) From review of this application and our conversations, it is my understanding that we are approving
this device under its own FCC ID as a system and not relying on any modular approvals. Please confirm
that our understanding is correct.

***R. To the extent possible, we are relying on the certification reports of internal modules (WLAN, RFID
and Bluetooth modules). This application provides the necessary information to support the***

incorporation of said modules into a single unit and addresses specifically issues related to co-location and electromagnetic compatibility.

3) Please confirm that this device does not operate in any peer to peer operations in the 5250 – 5350 and 5470–5725 MHz bands. Note the manual mentions peer to peer for 5150-5250 MHz. An attestation that peer to peer is controlled and turned off via firmware must be provided.

R. We withdraw the application for 5250 – 5350MHz bands. Peer-to-peer operations is only allowed in 5150-5250 MHz (See page 2 of 2 of Wireless Quick Reference Guide).

See MC9090R6 Application Form - 2 revised. See MC9090R6 Test Report - GEMINI rev1.

4) Recent information from the FCC requires that the FCC ID of the master used to test the channel move functionality be included in this application. Please provide.

R. We withdraw the application for 5250 – 5350 MHz bands. See revised 731 form.

5) FYI….Please note that we are still awaiting feedback from the FCC regarding the acceptability of attestations vs. test report for the channel move functionality for the bands operating from 5250 – 5350 MHz.

R. Acknowledged.

6) FYI…..It would be suggested that for future applications of this kind, that a separate cover letter explaining the nature of the application be provided to help clarify all aspects of the application or possibly provide an appropriate matrix. It was actually quite difficult to confirm if all the various requirements (radiated, conducted, and bandedge) are appropriately covered and from which report. Tests such as bandedge are actually a combination of radiated and conducted tests and as given further below could not necessarily be found for this device.

R. Acknowledged. For future systems of this nature we will include a cover letter. There is an overview in the abstract of the Washington Labs test report that may be of assistance.

7) The 2 part FCC statement information appears to possibly be placed elsewhere on the device. Additionally, the labeling information references 2 other documents for more regulatory information. Please provide sample labels and information showing the location on the device of any other labels relevant to FCC or IC compliance.

R. Label size is not sufficient to allow for a legible statement. The two-part statement is included in the User's Manual.

8) It is uncertain whether internal photographs also cover the BT portion of the device. Please explain or label the photographs as necessary to show this.

R. Please seeMC9090R6 Internal Photos - Supplemental.

9) Please provide a photograph of the main board with the WLAN removed.

R. Please seeMC9090R6 Internal Photos - Supplemental.

10) It is uncertain where the BT and WLAN antennas are located. Please provide additional photographs as necessary to document this.

R. Please seeMC9090R6 Internal Photos - Supplemental.

11) If possible, please provide information regarding the antennas used in this device (i.e. manufacturer, model, gain, etc.)

R. Antenna descriptions have been uploaded.

12) Please explain if the data vs. CW signal is transmitted on each channel hop. The FCC has typically only allowed CW signal if it is half-duplexed with a modulated signal and a CW signal on each hop frequency.

R. The RFID device is half-duplexing a CW signal (listen mode) with an AM modulated signal (interrogate mode) for each hop channel.

13) The 900 MHz RFID reader is asking for approval from 902.91 – 927.29 on the 731 form. However test report and suggests 902.75 – 927.25. Additionally, provide a sample hopping list to show compliance with the pseudo random hopping requirements and the frequencies of use.

R. See MC9090R6 Application Form - 3 rev1. Please see: "WJ MPR7XXX Operational Description: Freq Hop".

14) For the 900 MHz TX, system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals (15.247(a)(1)). Please provide information that shows this device complies with this.

R. The transceiver uses homodyne architecture. Refer to block diagram: The VCO output is split between TX and RX circuits so the TX and RX channel bandwidths are identical. The filters shown are bandpass filters, not channel filters. Channel bandwidth for both RX and TX is function of the VCO, which is the same for both.

15) For the 900 MHz TX, please provide information in order to explain compliance to 15.247(g) & (h).

R. 15.247(g): The reader employs 50 hopping frequencies. Each frequency is used equally on average by the transmitter. The MPR RFID readers use pseudorandom hopping frequency sets and use all 50 channels. The maximum channel occupancy is 0.4 seconds in a 20 second period. The reader transmits short bursts of RF then 'listens' for the return backscattered reflected signal from the RFID tags, one at a time.

15.247(h): The MPR RFID readers do not have any intelligence that would allow them to recognize other users within their operating spectrum. Under normal usage only one RFID reader is intended to be used in any particular location. If more than one reader is required to cover a large warehouse, for example, the reader antennas would need to be directed away from each other so that both readers could function properly.

16) FYI…..This device is approved as a system always containing all 3 TX. Removal of any of the 3 transmitters would not be allowed under this approval.

R. Noted. The manufacturer has been notified. The system is only marketed with all 3 transmitters. Other variations are approved under separate FCC ID's.

17) For the Washington Labs Report, please explain how average results were obtained. It appears that the 900 MHz is pulsed in nature and therefore should have been obtained using an appropriate duty factor instead of using a average detector.

R. The unit was set to continuous transmit with a transmit pulse width of 19.5ms and a duty cycle of 53%. The video bandwidth was set to 100Hz for the average measurements. Also, all of the peak measurements meet the average limit with the exception of one that exceeds the average limit by 0.7dB and a duty cycle correction would have this emission below the average limit.

18) Please confirm that for the 900 MHz emissions measured in the Washington Labs report, that the device was treated as a portable device and checked in all 3 axis to obtain worse case results.

R. The device was tested in all three orthogonal planes with the worst case emissions reported.

19) It is unsure if radiated data to show compliance to restricted bands at the bandedge < 5150 and > 5350 MHz has been provided. Kindly show where this information can be found or provide. Note that the original report was for a module and not the final device being approved. Given this is an approval of the whole device radiated should be done for the configuration being approved.

R. The restricted band edge data is located in Section 5.5 of the 802.11a test report. The 802.11 card was tested for radiated emissions with the co-location testing in this configuration. Please note that the abstract in the Washington Labs report may give further clarification on the previous approval of the MC9090.

20) In the RF exposure, for the 900 MHz TX it cites a 60.5% duty factor. However 60.5% duty factor would only be a few dB correction an not the > 10 dB shown in the RF exposure. Additionally, for purposes of correcting duty factor for power, this would actually be a 10 log (duty factor) correction. Please review/correct as necessary. Additionally, it appears that previous applications may have used a 73% worse case duty factor. Please correct as necessary.

R. The RF Exposure document has been revised to show the correct power adjustment based on a 73% duty factor. Please see exhibit "MC9090R6 RF Exposure Info – revised"

21) Various information (i.e. operational description) states that the antenna gain is maximum -6 dBi (page 9 of 23 and possibly others). The MPE exhibits appears to utilize a +6 dBi antenna gain in the calculations. Previous applications suggest +6 dBi was used. What is correct? Please correct all affected exhibits.

R. +6 dBi is correct. See "MC9090R6 RFID antenna spec sheet".

22) High band 5 GHz radiated data appears to only cover 5745 – 5825 MHz, not 5830 MHz as given on the 731 form. Most high channels are at 5825 as well. Please review the 731 form for DTS 5GHz listing and explain the reference to 5830.

R. The data in the 802.11a test report covers up to 5805MHz. For the 5825 – 5830MHz band tested to §15.247 , please see exhibit "MC9090R6 Test Report - 5745-5830".

23) Conducted testing (power, spectral density, peak excursion, etc) does not appear to support up to 5825 MHz. It appears the highest frequency tested was only 5805. Please review/correct.

R.Please see exhibit "MC9090R6 Test Report - 5745-5830".

24) Some results are over a year old. IC typically has not allowed this without at least a subset of testing performed to ensure the results are still valid. Please note that in the near future IC has indicated that this will be published in one of their standards. Please justify the use of this data as appropriate.

R. We submit that, because we are relying on existing approvals and no changes are made to the modules as basis for the certification, that the age of the test data supporting this application is not germane.

25) FYI….Above comments for FCC also apply to IC as well.

R. Acknowledged.