



Date: 4th November 2002

Miss Joe Dichoso
Authorization & Evaluation Division
Federal Communications Commission Laboratory
7435 Oakland Mills Road
Columbia, MD 21046

Re: Form 731 Confirmation Number: EA417429 with FCC ID: AZ489FT7001.

Dear Mr. Dichoso;

Motorola Inc., 8000 West Sunrise Boulevard, Fort Lauderdale, Florida 33322, herein submits its response to your 31st October 2002 request for information on FCC ID: AZ489FT7001, EA417429 via correspondence number 24238.

Q1) Filing still has duplicate and mislabeled exhibits, e.g., in External photos the exhibit "New Photos Wrist worn Waist worn Options" has only 2 pages antenna engr drawings.

R1) The mislabeled and corrected Exhibits will be corrected as follows:

Please **delete** the following eight files:

1. "New Exhibit 9 External Photos" (File size 410196)
 2. "New Photos Wrist worn Waist worn Options." (File size 414509)
 3. "New Exhibit 1 Table of Contents FCC ID label and General Information". (File size 244737)
- The following four exhibits were left from the original submission which were not deleted and should be deleted:
4. "LA4137INTphotos (File size 787509)
 5. Internal Photos (File size 1216160)
 6. Internal Pictures (File size 757536)
 7. Exhibit 9 Internal Photos (File size 1547176)
 8. "Excess Exhibit Deletion List" (File size 696053)

The following files will be **uploaded**:

1. New Exhibit 9 Internal Photos
2. New Photos Wrist worn Waist worn Options will be uploaded under the RF Exposure Exhibit

Q2) It would be useful to have more description and maybe timing diagrams to show that 2% duty factor is applicable. Explanation should be included or referenced in RF exposure exhibit.

R2) Transmit Duty Cycle Time - Attached please find our calculation of the WLAN Transmit duty cycle time. The worst case result is transmit Duty cycle of less than 0.2%. (Please note, as explained in the attachment, that in the Emerald System the upper limit of the transmit duty Cycle is 0.2% and it cannot be exceeded).

Since in Symbol's grant to FCC the Transmit Duty Cycle is 2% and in order to cover possible longer transmissions e.g.: system health check we have decided to define the transmit duty cycle of the Emerald System for FCC also as 2%.

Q3) Exhibit "new test report" shows conducted power from HP438A Power Meter & HP8482H Power Sensor. How about submitting conducted with that when device is set at 2%.

R3) Since the Emerald Terminal transmits for about 1mS every 500mS, the test equipment is limited in its capability in measuring the power at 1 mS. Therefore, we set the radio to special test mode for CW transmission (equivalent to 100% transmit duty cycle) and performed the power output measurement. The power at 2% duty cycle can be calculated from the results of the FCC Test Report, Exhibit VI, page 3. It is 0.858mW which is 2% of 42.92mW.

Note: The WLAN radio is an OEM radio manufactured by Symbol Technologies. This radio has a FCC grant with a duty cycle of 2%, Motorola is not authorized to modify the radio or its operation.

Q4) Output power will be listed on the grant as .59 mW for the Bluetooth and 43 mW for the WLAN. Please verify or retest.

R4) Motorola agrees with the FCC that the output power of the Bluetooth as 0.59mW and the WLAN output power as 43mW.

Q5) The Bluetooth test report needs correction. This needs to be filed under the DTS rules, unless you want to file a composite application (same identifier but filed as a FHSS system with additional information to be submitted.)

Otherwise, file the Bluetooth as a DTS. Correct the test report by deleting pages 15-33 and correcting the frequency ranges in pages 1-3 to 2402-2480.

R5) Per the attached interpretation memo from the FCC, the Bluetooth device cannot be filed as a DTS device. Therefore, we are suggesting that the Bluetooth Test Report, as filed and accepted by the FCC by Symbol Technologies, remain unchanged for this submission.

FEDERAL COMMUNICATIONS COMMISSION

Laboratory Division
7435 Oakland Mills Road
Columbia, MD 21046
August 3, 2001

To all interested parties,

The FCC Laboratory recently issued an interpretation that a frequency hopping spread spectrum (FHSS) transmitter could be approved under the waiver allowed for a **digital transmission system (DTS)** in the Further Notice of Proposed Rulemaking and Order in ET Docket No. 99-231 (FCC 01-158). After that interpretation was issued, we were asked to carefully review it for consistency with the proposal in the rulemaking.

Based upon the text in this rulemaking, the Laboratory has reversed its recent interpretation. A FHSS transmitter may NOT be approved under the waiver permitted for a DTS device. Please disregard any information that you may have received informing you that a FHSS transmitter can be approved as a DTS device.

The rulemaking that adopted the DTS provisions specifies that any communication system that has characteristics similar to a direct sequence spread spectrum (DSSS) system may be approved as a DTS device during the rulemaking proceeding. This was to allow new technologies like the Wi-Lan transmitter to be approved without delay. However, a FHSS transmitter clearly has characteristics very dissimilar to a DSSS transmitter. The Commission never intended the DTS waiver and approval process to apply to a FHSS transmitter. As was intended in the proceeding, this waiver was to apply only to a transmitter that employs spectrum characteristics similar to a DSSS system.

Since a Bluetooth transmitter is classified as a FHSS device, it cannot be approved as a DTS device.

Please contact Mr. Richard Fabina at rfabina@fcc.gov or 301-363-3021 if you have any questions regarding this reversal of our recent interpretation.

If you have any questions with the above responses, please call me at 954-723-5793.

Sincerely,

/s/ Mike Ramnath

FCC Liaison

Email: mike.ramnath@motorola.com