

Date: October 7, 2014

Office of Engineering and Technology  
Laboratory Division  
Equipment Authorization Branch  
Federal Communications Commission Laboratory  
7435 Oakland Mills Road  
Columbia, MD 21046

Att: Tim Harrington

**Subject:** Response to Audit Correspondence number 182615 for transmitter with FCC ID AZ489FT7059  
(Form 731 Confirmation Number TC579491)

Dear Mr. Harrington,  
The followings are our responses for the subject correspondent:

1) For FCC equipment records, especially for filings where RF exposure compliance is addressed using SAR measurements, it is requested that internal photos exhibits show component placements with/within chassis assembly, i.e., also showing enclosure/housing.

From 2.1033(c)(12), "chassis assembly" and "internal construction" generally means "exploded" view internal photos including all (major) parts and pieces of the final product; it is requested to also show antenna connections / cables / tracks and metal structures proximate to those.

**Response:**

Enclose is the addendum to Exhibit 9 (Exhibit 9A) to include the photos of the back side and front side of the chassis.

2) Form 731 lists rule parts 22, 74, 80; however unless we missed it we did not see the required compliance information and test data for 22, 74, 80 service rules.

2.915(a)(1) permits grant of an equipment application that demonstrates compliance of the equipment with the pertinent technical standards of the radio service rule(s) governing its operations.  
2.911(b) requires equipment authorization applications to contain compliance information and test data per the radio service rules governing operation of the equipment, in addition to containing compliance information and test data per 2.1033.

Please OMIT 22, 74, 80 from Form 731; alternatively please amend filing to provide compliance information and test data and with listing the associated EXPLICIT rule section and paragraph numbers for the intended and qualified 22, 74, 80 licensed station equipment operations.

**Response:**

The emission data for 22, 74, and 80 service rules are indicated in the Exhibit 6 LMR Test report that is currently on filed with FCC:

- Part 22: page 30 and 31
- Part 74: page 27. However, there is a typo in the label, the plot should be labeled as "Rule part 74" instead of "Rule part 80"
- Part 80: page 7

The Exhibit 6 -LMR test report has been revised to correct the label for rule part 74 data plot. Please note that the pages referenced above have changed since the revised test report is now including the cover page.

3) Form 731 part 90 listings include 775-776/805-806 MHz.

Per 90.20(c)(3), 90.521, 90.531 first paragraph, etc., routine licensing and governing technical standards for Public Safety operations are not defined for 775-776/805-806 MHz.

Actually that is CMRS Part 27 Upper 700 MHz Band B Block, not allocated nor licensable for part 90; therefore not qualified for part 90 equipment authorization.

Please omit 775-776/805-806 MHz part 90 from this Form 731 [KDB pubs. 634817, 149672; 2.962(f)(1)].

**Response:**

The TCB (TUV SUV BAPT) has revised the 731 form to include the applicable frequency ranges for Rule part 90 for the 700 MHz band (769-775MHz, 799-805MHz).

4) Form 731 part 90 listings include 764-775/794-805 MHz.

Service rule technical standards governing U.S. non-Federal (FCC) Upper 700 MHz Band Public Safety Narrowband operations and associated transmitting equipment include sections:

90.20(c)(3), 90.20(d)(77), 90.175(e), 90.203(m), 90.203(n), 90.205(j), 90.521, 90.523 first paragraph, 90.525, 90.531 first paragraph, 90.531(b), 90.531(b)(1), 90.531(b)(3) to 90.531(b)(7), 90.531(d), 90.531(e), 90.535, 90.537, 90.539(a) to 90.539(c), 90.541, 90.543(a) to 90.543(d), 90.545, 90.547, 90.548 [amended July 10, 2014], 90.553, 90.557(d), 90.559.

Per 90.20(c)(3), 90.521, 90.531 first paragraph, etc., routine licensing and governing technical standards for Public Safety Narrowband operations are not presently specified for 764-769 MHz [i.e., FirstNet spectrum; FCC-13-137, DA-12-1462, etc.].

Therefore 764-769/794-799 MHz (or 758-769/788-799 MHz) should not be listed on a Form 731 for Part 90 Public Safety Narrowband equipment (or such emissions/modes) absent specific justification in the filing [see KDB pub. 634817; TCB provision 2.962(c)(5) along with Jan. 2014 FCC-TCB conference notes; TCB provision 2.962(f)(1)].

Where listing of narrowband operations in 763-769/793-799 MHz qualifies and is supported by appropriate information in the filing, please use grant remark:

"This filing includes compliance information and test data for incumbent public safety narrowband operations in Public Safety Broadband (FirstNet) spectrum."

Consistent with KDB pub. 634817, in this case also at minimum test data must be provided for channels within the Public Safety Narrowband spectrum (769-775 MHz).

**Response:**

- The TCB (TUV SUV BAPT) has revised the 731 form to include the applicable frequency ranges for Rule part 90 for the 700 MHz band (769-775MHz, 799-805MHz) and LTE band 14 (788-798MHz).
- The Exhibit 6 LMR test report has been revised to include Adjacent Channel Coupled Power Ratio for the 769-775MHz band.

5a) We note this filing indicates an associated KDB inquiry number

(Note: KDB inquiry tracking numbers are not publicly disclosed, per KDB pubs 388624, 726920).

That KDB inquiry contained in essence statement of applicant's intent to address SAR compliance under the 2.1093(d)(1) occupational / controlled limits, notwithstanding the KDB pub 447498 D01 v05r02 item 3. 5) provision:

"Occupational exposure limits do not apply to consumer devices and radio services supporting public networks and Part 15 unlicensed operations."

Per consultation with OET Laboratory Division staff, this correspondence affirms that occupational/controlled limits may be applied, as consistent with uniform policies and procedures.

KDB pub 447498 D01 v05r02 item 3. 5):

" Occupational exposure limits only apply to "work-related" use conditions.

Users must be "fully aware of" and be able to "exercise control over" their exposure to qualify for the higher occupational exposure limits.  
Occupational exposure limits do not apply to consumer devices and radio services supporting public networks and Part 15 unlicensed operations.  
When devices are authorized in accordance with the general population exposure limits, additional equipment approval is not required to satisfy occupational exposure requirements.  
Mandatory RF exposure training is required for workers to qualify for occupational exposure limits.  
When it can be demonstrated that users are required to adhere to the training instructions and are able to mitigate compliance concerns by applying the instructions, detailed training instructions incorporated in manuals, in conjunction with conspicuous permanent labeling on the device, may be considered as acceptable training to qualify workers to operate a device according to occupational exposure limits. "

Response:  
No response is required.

5b) Notwithstanding the preceding 5a), the following clarifying revisions are requested for the SAR report in this filing.

Portions of the SAR report cross-reference KDB pub. 643646. Per its website cover page, KDB pub. 643646 provides test reduction guidance for occupational push-to-talk (PTT) radios pending the development and publication of final procedures. The 643646 procedures were generally developed considering only typical PLMRS part 90 operations and equipment and typically operating with 50 % push-to-talk duty factor. Thus at this time OET Lab does not consider 643646 to be generally applicable to devices with 100 % duty factor in CMRS or unlicensed spectrum.  
[TCB provisions: 2.962(f)(1) follow rules and policies including procedures, 2.962(f)(5)(i) unclear application of requirements, 2.962(c)(4) recognize where and obtain interpretations.]

Considering that this filing contains SAR data that demonstrates compliance with general-population / uncontrolled limits for 100 % duty factor LTE operations in 777-787 MHz, at this time we will allow use of the 643646 provisions for other than PLMRS part 90 PTT modes under the following condition.  
Please revise all 777-787 MHz results/description portions of the SAR report to list the test exclusion thresholds in terms of the general-population / uncontrolled limit. For example, at page 38 of 109 please change from "half the SAR limit i.e. 4.0 W/kg" to "half the SAR limit i.e. 0.8 W/kg". Unless we missed something, we do not expect this to require any re-testing or additional testing.

Response:  
MSI (Motorola Solutions Inc.) is requesting a meeting with FCC to discuss further on this question.

Please contact me if you require any additional information.

Sincerely,



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