

Motorola Solutions, Inc.
Request for Conventional Experimental Authority
File No. 0899-EX-CN-2019
October 221, 2019

NARRATIVE STATEMENT

Pursuant to Section 5.54 of the Commission's rules, 47 C.F.R. §5.54, Motorola Solutions, Inc. ("MSI") respectfully requests a conventional experimental license to conduct low power testing of base station and subscriber devices within the MSI production facility in Elgin, Illinois. MSI is currently conducting these same tests pursuant to special temporary authority ("STA"), call sign WO9XQE. MSI's STA expires on December 16th, 2019, and, therefore, MSI files this application for a conventional experimental license in order to continue these tests under the same provisions as previously approved. As these tests are in support of the manufacture of current product lines, MSI requests that the experimental license be issued with a 5 year term.

In support of this request, the following is shown:

1) Applicant's Name, Address, and FCC Registration Number ("FRN"):

Motorola Solutions, Inc.
Attention: Frank Korinek
1455 Pennsylvania Avenue NW
Suite 900
Washington, DC 20004

FRN: 0008941742

2) Contact Information:

Technical Point of Contact ("POC") and "Stop Buzzer/Kill Switch:"

Gregory Buchwald
DMTS Engineer
Motorola Solutions, Inc.
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FCC Contacts:

Frank Korinek
Director, Spectrum & Regulatory Government Affairs
Motorola Solutions, Inc.
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3) Description of Operation and Purpose of Test:

MSI requests authority to perform very low power testing of two-way mobile radio systems designed to operate under the TETRA and Project 25 standards at its Elgin, Illinois facility. The purpose of these transmissions is to test, calibrate and perform proof of performance certification of production equipment prior to shipment.

Equipment to be tested will include both base station infrastructure equipment and subscriber devices. All of the tested devices are being manufactured to be exported out of the United States or for U.S. Federal Agencies so the requested frequency bands include allocations that are not normally available for non-government users in the United States. Grant of this authority will enable MSI to continue pursuing global market opportunities while generating US-based employment opportunities. Grant of this authority will also allow MSI to continue to develop and produce equipment for Federal system deployment.

Equipment utilized during these tests will operate at low power levels. All base station equipment will terminate into RF attenuators to ensure that conducted RF output levels will be reduced to a maximum level of 0dBm/1mW. Tests will be conducted indoors at the Elgin. MSI will limit the power, area of operation, and transmitting times to the minimum necessary to support an effective indoor, immediate area demonstration and collection of data. MSI proposes to limit emissions levels at the physical confines of the building to -90dBm or lower.

4) Dates of Operation:

December 15, 2019, through December 15, 2024.

5) Class(es) of Station(s):

Fixed (up to 10 units at any given time)
Mobile (up to 25 units at any given time)

6) Location(s) of Proposed Operations:

A limited number of temporary fixed and portable would be operated indoors only within a radius of 0.25 kilometers of the test site located at:

Motorola Solutions, Inc.
2540 Galvin Dr,
Elgin, IL 60124
N42 05' 51.8"; W088 20' 40.3" (NAD83)

7) Equipment To Be Used:

During the term of this STA, the equipment to be utilized will be:

- GTR8000 Base station radio
- APX-family of subscriber units including APX8000, APX7000, APX6000, APX4000 devices, and APX3000.
- MTS1, MTS2, and MTS4 Tetra Base Stations
- ST7000, MTP8000EX, ST7500, MTP3000, MTP6650 Tetra subscribers

Not all of this equipment is intended to be marketed in the United States and, therefore, may not have an FCC ID.

8) Frequencies Requested:

- 250-270MHz (Tetra; export only)
- 350-400MHz (Tetra; export only)
- 380-400MHz (P25 for US federal market use)
- 406.1-430 MHz [TETRA; export only (410-430MHz) and US Federal Market use (406.1-420)]
- 440-470 MHz (TETRA; export only)
- 440-450 MHz (P25; export only)
- 806-817MHz; 851-862MHz (TETRA; export only)

MSI is not requesting to use frequencies in the 225-400 MHz band for Air Traffic Control of military aircraft. Therefore, it is not required to coordinate this request with the FAA prior to the submission of this application with the FCC. In addition, MSI would restrict all transmissions to indoor locations only and at very low power. MSI believes that there is no risk to other licensed services, including aeronautical services, from these proposed operations.

9) Power Levels:

All devices, FX and MO, will be attenuated to a conducted power level of 0dBm; mean power. Maximum radiated indoor power level will be -20 dBm to minimize the possibility of any measurable leakage outside the building. In addition, MSI will insure that the signal level is no greater than -90dBm at the building interior building perimeter wall.

10) Type of Emission, Modulation Technique, and Bandwidth Required:

Motorola Solutions proposes to operate using APCO Project 25 phase 1 and phase 2 waveforms on the downlink and up link allocations. In addition, MSI also proposes to utilize TETRA waveforms on downlink and uplink allocations. Emission designators requested are listed below. Other emission modes may be utilized, but in no event will the emissions extend beyond the frequency bands requested.

Prior to operation, MSI will determine the exact center frequency of operation utilizing spectrum scans at the Elgin, IL location, use of the FCC database to determine the existence of prior licensed services, and the FCC database to determine if any licensed Earth stations reside within the test area requested. Additional channel quality methods will also be utilized during the each test activation.

- TETRA: 21K0D1W
- P25: 8K10F1D, 8K10F1E; 8K10F1W
- P25 phase 2: 9K80D7W, 9K80F1D, 9K80F1E, 9K80F1W

11) Overall Height of Antenna(s) Above Ground/Orientation:

No antennas will be installed in a fashion that will require approval under FAA and FCC rules and regulations.

Antennas utilized will be located indoors with an efficiency not to exceed 0dBi. They will be located no higher than 2 meters above floor level on the ground floor of the interior of the building. No outdoor antenna placements will be utilized.

12) Protection Against Interference:

Motorola Solutions understands that it must accept interference from any other users of these bands and that all operations by Motorola Solutions will be on a secondary basis and must not cause interference to operations approved to operate in the band. Motorola Solutions has established a point of contact (“POC”) identified above with “kill switch” authority, and it agrees to cease operations immediately upon receipt of request to the kill switch POC.

Motorola Solutions does not expect the proposed operation to cause interference with any licensed operation. Should interference occur, however, Motorola Solutions will take immediate steps to resolve the interference, including if necessary arranging for the discontinuance of operation.

MSI has coordinated its experimental operations with licensees in the 454-459 MHz band and the 809-824/854-869 MHz band within 5 miles of the contours of the testing location as specified on its STA WO9XQE. MSI will again coordinate with licensees in these respective bands but requests that the coordination distance be reduced to no more than 1 mile given the extreme low power of MSI’s operations.

13) Restrictions on Operation:

Motorola Solutions is not seeking authority to perform a market study of unapproved devices. All tested equipment will remain under control of MSI.

14) Public Interest:

Motorola Solutions submits that issuance of an experimental license as requested is in the public interest, convenience, and necessity. Grant of experimental license with a 5 year term will help support Motorola Solutions’ efforts to develop innovative equipment that will accommodate the communications needs of potential users. In addition, grant of an experimental license would allow MSI to utilize US labor to produce equipment for export purposes.