

**NARRATIVE STATEMENT**

Pursuant to Section 5.3(d) and (f) and Section 5.61 of the Commission's rules, 47 C.F.R. §§ 5.3(d), (f), 5.61 (2017), Motorola Solutions, Inc., hereby respectfully requests a limited, short-term special temporary authority ("STA") for a five-day period from **October 5 through October 10, 2018**, to operate in the 758-768/788-798 MHz bands for the purpose of demonstrating prototype broadband Long-Term Evolution ("LTE") equipment to public safety agencies during the International Association of Chiefs of Police ("IACP") Conference to be held in Orlando, Florida. The proposed operation will not involve live-duty operations by first responders or others to protect life, property, or safety.

**A. Purpose of Operation and Need for STA:**

Motorola Solutions, Inc. ("MSI") is a leading manufacturer of mobile radio equipment for the public safety and homeland security community and is continually engaged in the design and development of new and innovative communications equipment. The experimental authority requested herein will allow the company to demonstrate the functionality of prototype devices designed to support the needs of the public safety and homeland security community.

Specifically, MSI proposes to conduct demonstrations of prototype equipment during the IACP meetings in Orlando, Florida. To accommodate set-up requirements as well as to ensure all operations up to demo tear-down are covered by Commission authorization, MSI respectfully requests that the FCC grant the STA for the period October 5 through October 10, 2018.

Grant of an STA will allow MSI to demonstrate prototype equipment and obtain additional feedback so that it may enhance the company's efforts to design, develop and improve its equipment to meet the communications needs of potential users.

**B. Location of Proposed Operation:**

MSI proposes to conduct its demonstrations at the Orange County Convention Center. Equipment would include one temporary base station and associated antenna, along-with a limited number of portable/mobile units, all operating within a radius of less than 0.5 kilometers of the base station. The address and approximate reference coordinates (in Datum: NAD83) of the temporary fixed base station is:

Orange County Convention Center  
West Building, Booth 2201  
9800 International Drive  
Orlando, FL 32819

28° 25' 28.2" N Latitude; 81° 28' 11.2" W Longitude (Datum: NAD83)

**C. Technical Specifications:**

**1. Frequencies Requested and Duty Cycle:**

MSI proposes to use of the full 10 MHz uplink and downlink portions of Band Class 14 ("BC14"): 758-768 MHz (downlink) and 788-798 MHz (uplink). It does not propose to use either guard band adjacent to the BC14 allocation. The operations would be conducted for demonstration purposes only and would be limited to the hours and dates of the conference, approximately 8am until 5:30pm ET, October 5 through October 10, 2018.

**2. Total Aggregate Power:**

MSI seeks to cover the indoor physical area surrounding its assigned exhibit space at the conference (Booth #2201), a range not to exceed 50 meters from the center of its booth. No outdoor RF transmissions will take place. It MSI proposes to operate at transmit effective isotropic radiated power ("EIRP") level from the downlink / eNodeB radio of 40mW (mean) or less.

The subscriber devices will be directed to operate at the minimum necessary power level required to set up the link between the subscriber and base. Since this range is less than 50 meters, MSI expects the subscriber devices, although capable of operating at an EIRP level of 160mW (mean), will also operate also in the range of 5 - 40mW EIRP.

Low gain antennas, as noted below, will be deployed and power control will maintain extremely low uplink transmit levels from subscriber devices. MSI will reduce the actual powers to the minimum power needed for successful operation, based on set-up and testing at the demonstration site. Moreover, all power levels will comply with the limits set forth in the FCC's rules, including those relating to human exposure to radiation.

**3. Modulation and Emissions**

MSI proposes to operate using OFDM modulation. The primary emission designators are 5M0G7D, 5M0W7W, 5M0G2D, 5M0D7D, 10M0G7D, 10M0W7W, 10M0G2D, and 10M0D7D. Other emission modes may be utilized, but in no event will the emissions extend beyond the frequency bands requested.

#### **4. Antenna Information**

Antenna type and number of antennas used: The eNodeB base radio will utilize a pair of small, vertical portable type antennas commonly found on handsets (*i.e.*, rubber ducky style whips). They are approximately 4 inches in height and have 2.2 dBi gain. They will be connected directly to the rear of the eNodeB base station radio. The subscriber devices utilize internal antennas similar to a cellphone format, which exhibit between -6 and -12 dBi gain when held in typical fashion.

Antenna orientation – azimuth and toward zenith: The antenna will be connected directly to the back of the eNodeB base station and will operate omnidirectionally with a gain of 2.2 dBi. The eNodeB base station radio is capable of one Watt maximum power (mean) but will operate, as noted below, at a power level consistent with coverage within a 50-meter radius on the exhibit booth. No beam tilt will be utilized with the omnidirectional antenna due to the low height above ground at which the eNodeB base station radio will be deployed and due to the close proximity of the subscriber devices to be demonstrated.

Antenna heights: The eNodeB base station radio will operate on an exhibit table surface top. The height above ground level will be approximately 1.5 meters. No antennas will be mounted in a fashion that will require approval under FAA and FCC rules and regulations.

#### **5. Equipment To Be Used**

MSI expects to conduct its demonstration with one base unit (*i.e.*, a LXN6000 Deployable LTE System) and up to five mobile/portable units. As noted above, MSI will limit the power, area of operation, and transmitting times to the minimum necessary to provide an effective demonstration.

#### **D. Protections Against Causing Interference:**

As noted above, MSI has requested authority to operate in the 758-768/788-798 MHz bands, which is allocated for a nationwide public safety broadband network and licensed to First Responder Network Authority (“FirstNet”). MSI certifies that the Governor-appointed State Single Point of Contact, as specified at [www.firstnet.gov/consultation](http://www.firstnet.gov/consultation), has been notified of STA application (*i.e.*, Mr. Heath Beach; telephone: 850.922.4135; email address: [Heath.beach@dms.myflorida.com](mailto:Heath.beach@dms.myflorida.com), as specified at <https://www.firstnet.gov/consultation>). Moreover, MSI has established a point of contact (“POC”) identified below with “kill switch” authority and will send the POC’s contact information to FirstNet upon agency approval of the requested STA.

MSI understands that it must not cause interference to FirstNet operations or those approved to operate in Band Class 14 per license (*i.e.*, FirstNet Spectrum Management Lease Agreement (“SMLA”) licensees/current incumbents) and that failure to coordinate effectively may result in immediate suspension of its authority until such time, as determined by FirstNet, that its operations may continue.

MSI also understands that it must accept interference from any other users of these bands and that it is its responsibility to coordinate its operations with other authorized user during the conference and that any failure to coordinate effectively may result in the immediate suspension of its authority until such time, as determined by FirstNet, that the operations may continue.

MSI also conducted a search of the FCC's Universal Licensing System ("ULS") database and verified that the proposed demonstration in Orlando should not interfere with any primary operations in that spectrum. Moreover, under FCC rules, Low Power TV stations and auxiliary stations were previously required to vacate the 700 MHz band, so no interference should occur to broadcast facilities.

Furthermore, as noted above, the length of the tests and demonstrations will be limited, extending only from October 5 through October 10, 2018.

In summary, proposed operations consistent with the commitments and statements presented above should not result in interference with any licensed operations. Should interference occur, MSI will take immediate steps to resolve the interference, including if necessary arranging for the discontinuance of operation.

**E. FCC Restrictions on Operation:**

MSI is not seeking authority to perform a market study under the requested STA. Moreover, no fees will be charged to entities using the equipment during this test. After the test is completed, MSI will disassemble the demonstration facilities.

MSI also recognizes that the operation of any equipment under experimental authority must not cause harmful interference to authorized facilities. In the unlikely event interference occurs, MSI will take immediate steps to resolve the interference, including discontinuance of operation if necessary.

Entities will be advised in accordance with Section 2.803 of the Commission's rules, 47 C.F.R. §2.803 (2017), that any unapproved devices which have not been authorized as required by the FCC are not being offered for sale or lease, or sold or leased, until authorization is obtained.

**F. Public Interest Statement:**

MSI submits that issuance of an STA as requested is in the public interest, convenience, and necessity. Grant of an STA will help MSI to develop innovative equipment that will accommodate the communications needs of the public safety community.

**G. Contact Information:**

Technical Contact and “Stop Buzzer/Kill Switch:”

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