

## **NARRATIVE STATEMENT**

By this application, Motorola Solutions, Inc. ("MSI"), hereby respectfully requests an experimental license to test, evaluate and demonstrate a prototype radio communications system designed to support the communications requirements of government entities engaged in public safety and homeland security activities. Specifically, MSI proposes to test a prototype system for a state government so that it may demonstrate the functionality and capability of the system, determine user acceptability, and obtain needed feedback to improve and enhance the design of the system. The experimental activities will be conducted on a non-interference basis using a limited number of non-Federal Government channels in the 150 MHz band that have already been pre-coordinated for such operation.

Please note that this request is identical to, and serves to replace and supplement MSI's current special temporary authority ("STA") covering this experimentation granted under File No. 0101-EX-ST-2013 and issued under call sign WG9XHW.

As provided under Section 5.61(b) of the Commission's rules, 47 C.F.R. § 5.61(b)(2012), this application is also intended to serve as a continuance or extension of MSI's authority to operate as permitted under its STA pending action on the application. MSI understands that such continuance or extension applies only to the operations authorized and as conditioned under that STA and that it must await action on this application for a regular license before it may operate in any manner or at any site proposed in this application that is at variance with operations authorized or conditioned under the STA. The extension is necessary to allow MSI to continue its tests pending Commission action on this application for regular authority.

MSI does not seek authority to conduct market studies or provide communications services under the requested experimental authority. Nor does it propose to market, sell, or lease prototype equipment to end users in conjunction with this test. The participants in the test will be advised that operation is being conducted under an experimental authority issued to MSI and is temporary. In addition, no fees will be charged to entities using the equipment during this test. After the experimentation ceases, MSI will recall and recover all devices that do not comply with FCC regulations.

The following information is provided in support of this request:

### **A. Proposed Operations / Locations and Frequencies:**

As noted above, MSI requests authority to test, evaluate and demonstrate a prototype radio communications system designed to support the communications requirements of government entities engaged in public safety and homeland security activities. To obtain valid data and to present an accurate demonstration of real-world operations, MSI must deploy a sufficient number of units during its test to simulate actual usage. MSI expects that it will be able to complete its demonstration with approximately 75 mobile or portables units per transmitter site. Moreover, it will likely conduct tests at

only three to five transmitter sites at a time. It will also limit the power, area of operation, and transmitting times to the minimum necessary to evaluate the system.

The proposed locations of the base stations are identified in the table below. Mobile operations will occur within 80 kilometers of these locations. MSI also seeks authority to relocate these sites at the request of the user to demonstrate the system at other sites, but in no event will the transmitters be located outside of the state of Tennessee or exceed the total number of transmitters or mobiles/portables specified above.

Operation under this experimental STA will be conducted on a non-interference basis on a limited number of 12.5 kHz channel pairs on non-Federal Government frequencies in the 150 MHz band allocated under Section 22.561 of the FCC's rules to the Paging and Radiotelephone Service. 47 C.F.R. § 22.561 (2012). Specifically, MSI seeks to deploy approximately three, but not more than seven, channel pairs per site that have been recommended by the state's frequency coordinators or that are currently under review by the FCC for assignment to the state agency (*i.e.*, on selected channels unassigned to other licensees near each location). Moreover, as mentioned above, MSI will likely conduct tests at only three to five transmitter sites at any given time and will limit the power, area of operation, and transmitting times to the minimum necessary to evaluate the system. Nevertheless, to ensure it has flexibility to test the system more expansively, if needed, MSI has requested authorization to conduct tests on any of the channels allocated to this band so that it has the option to deploy alternative (non-Federal Government) channels in the band to avoid interference as necessary.

**B. Technical Specifications:**

Non-Federal Government Frequencies Only:	152.015 – 152.225 / 158.475 – 158.685 MHz; 152.495 – 152.825 / 157.755 – 158.085 MHz
Base Station Power:	Varies By Location: From 50 W to 450 W Peak Effective Radiated Power (ERP); From 30 W to 65 W Transmitter Output Power (TPO) (all power levels will comply with the limits set forth in the FCC's rules, including those relating to human exposure to radiation)
Mobile Power:	50 W Peak ERP / 45 W TPO
Bandwidth:	12.5 kHz per Channel
Modulation:	Frequency Modulation
Emission Designators:	8K30F1W, 9K80D7W
Station Antenna:	Omnidirectional up to 9 dBi Gain
Mobile Antenna:	Omnidirectional up to 3 dBi Gain

MSI also requests a waiver of the station identification requirements set forth in Section 5.115 of the Commission's rules, 47 C.F.R. § 5.115 (2012).

**C. Antenna Information:**

The antennas used for these tests will be installed and operated in accordance with all FAA and FCC rules and regulations.

**D. Restrictions on Operation / Interference Protection:**

MSI recognizes that experimental operations must not cause harmful interference to authorized facilities. As stated above, operation under this experimental STA will occur only on a limited number of 12.5 kHz channel pairs on non-Federal Government channels allocated under the FCC's rules and that have pre-coordinated or applied for such use. MSI will also coordinate with existing licensees, as necessary, but has selected and pre-coordinated channels that are not assigned in the test area or that are sufficiently distant so as not to pose interference concerns. Should interference occur, however, MSI will take immediate steps to resolve the interference, including if necessary arranging for the discontinuance of operation.

In addition, MSI will advise entities participating in the test that permission to operate has been granted under experimental authority issued to MSI, that such operation is strictly temporary, and that the operation may not cause harmful interference. To that end, MSI proposes to label prototype equipment or associated written information as follows:

**FCC STATEMENT**

Permission to operate this device has been granted under experimental authority issued by the Federal Communications Commission to Motorola Solutions, Inc., is strictly temporary and may be cancelled at any time. Operation is subject to the condition that it not cause harmful interference. This device is not, and may not be, offered for sale or sold until the approval of the FCC has been obtained. Thus, the user does not hold a property right in the device and may be required to return the device.

**E. Public Interest Statement:**

MSI submits that issuance of expedited special temporary authority as requested is in the public interest, convenience, and necessity. Grant of such authority will permit MSI to design and develop an innovative system that will accommodate the public safety and homeland security communications needs of users.

**F. Contact Information:**

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## ATTACHMENT

### Experimental Test Locations:

Site Name	Address	Latitude	Longitude
Jasper	Lower Fire Tower Road, Jasper (Marion), TN	35-09-30 N	85-39-21 W
Franklin County 911	1170 Iron Gap Road, Belvidere (Franklin) , TN	35-05-38 N	86-07-56 W
Hinch Mountain	Radar Tower Road, Crossville (Cumberland), TN	35-46-49 N	84-58-42 W
Braden Mountain	Highway 63, Pioneer (Campbell), TN	36-26-29 N	84-20-36 W
Chuck Swan	Main Forest Road, Sharps Chapel (Union), TN	36-22-20 N	83-53-35 W
Tennessee	At temporary fixed locations in the State of Tennessee (within 250 km of the coordinates listed, near TN)	35-57-18 N	83-55-02 W

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