DESCRIPTION OF APPLICATION AND JUSTIFICATION FOR NATIONWIDE AUTHORITY

I. Introduction And Background

Motorola, Inc., is a leading manufacturer of radio-frequency devices sold in the United States and overseas. It maintains its position in the industry by continually developing new products in response to evolving technologies and consumer demand.

Motorola is designing a new generation of transmitters and transceivers that will operate in the bands allocated for use in, among others: the Paging and Radiotelephone Service, Cellular radio service, Personal Communications Service ("PCS"), microwave services, Specialized Mobile Radio ("SMR") service, Broadband Radio Service/Educational Broadband Service ("BRS/EBS," formerly the Multichannel Multipoint Distribution Service/Instructional Television Fixed Service or "MMDS/ITFS"). Such devices are generally subject to the FCC's equipment authorization procedures before they may be marketed (*i.e.,* pursuant to the certification requirements set forth in Section 2.1033 of the agency's rules, 47 C.F.R. § 2.1033 *et seq*. (2004)). They are also subject to the FCC's licensing requirements before they may be operated (*e.g.,* under Parts 22, 24, 27, 90 and 101 of the FCC's rules). Moreover, prototypes of these devices generally may not be tested or operated without a regular or experimental license. *See id.* at § 2.803.

Accordingly, Motorola has in the past obtained either an experimental license or special temporary authority for each specific effort to conduct compliance, performance, functionality, and acceptance testing of its prototype products as well as to demonstrate its prototype products. It currently has over 300 authorizations referenced in the FCC's experimental licensing database that are related to such activities. Most of these authorizations were granted for a particular experiment or type of equipment or to allow operation at a specific site or sites.

Motorola believes, however, that its practice of obtaining a regular experimental or special temporary authority for each product or experiment before conducting research and development does not provide it the needed flexibility to adapt quickly to changes in research plans and requirements. Consequently, Motorola sought and was granted a blanket experimental license call sign WB2XCJ (subject to the noninterference and other conditions described below) to test, demonstrate and operate prototype products on a variety of bands and at temporary locations on a nationwide basis throughout the United States. As such, the request was fully consistent with the FCC's rule changes regarding blanket licenses in ET Docket No. 96-256. *See Amendment of Part 5 of the Commission's Rules to Revise the Experimental Radio Service Regulations*, ET Docket No. 96-256, *Report and Order*, 13 FCC Rcd 21391 (1998)("*ERS Streamlining Order*").

Motorola submits that the public interest, necessity and convenience are served by the grant (and renewal) of its license. As noted at paragraph 12 of the *ERS Streamlining Order*, such a grant enhances the company's ability to obtain information needed to ensure that the products it designs will accommodate and promote new technologies and services. It also allows Motorola to consolidate various experimental authorizations, thereby reducing the administrative burdens imposed upon the company and upon the Commission associated with the processing of hundreds of specific initial applications for regular licenses and requests for special temporary authority or their renewals when needed.

II. Description of Operations

A. Frequencies

Under its license, Motorola conducts experimental operations pursuant to the provisions of Sections 5.3(h) & 5.3(i) of the FCC's rules, 47 C.F.R. § 5.3(h) & (i)(2004), in the bands 806-902 MHz, 902-928 MHz, 929-932 MHz, 940-941 MHz, 1850-2200, 2290-2700 MHz, 5.15-5.25 GHz, 5.725-5.825 GHz, 27.350-28.350 GHz, 29.1-29.25 GHz and 31.0-31.3 GHz. Operation in these bands is coordinated with licensees in accordance with FCC requirements and as described further below. Moreover, Motorola does not operate on channels in these bands that are allocated for exclusive Government use. In the bands that are shared with Government users, Motorola operates on only those channels that are designated for Non-Government use under the Commission's rules set forth in Title 47 of the Code of Federal Regulations, 47 C.F.R. Parts 1-101(2004) and in conformance with the technical and operating requirements applicable to such use or as permitted under the instant experimental authorization. Motorola will seek additional or separate authority, if needed, before it commences operations that do not conform with these limitations.

B. Transmitter Power

Frequencies (MHz)*	Authorized Power (ERP)**
806-851	500 W
851-894	500 W
896-902	500 W
902-928	200 W
929-932	3.5 kW
940-941	3.5 kW
1850-1910 FX	1 kW
1850-1910 MO	1.22 W
1910-1915 FX	1 kW
1910-1915 MO	1.22 W
1915-1920 FX	1 kW
1915-1920 MO	1.22 W
1920-1930	3 W***
1930-1990 FX	1 kW
1930-1990 MO	1.22 W
1990-2200	2 kW
2290-2500	2 kW
2500-2700	2 kW
5150-5250	10 W
5725-5825	10 W
27350-28350	2 kW
29100-29250	2 kW
31000-313000	2 kW

* The references and power levels associated with the operations in the 1910–1930 MHz band have been revised in this exhibit in comparison to Motorola's current license to accommodate changes in the allocation of that band.

** All power limits set forth above are "Peak."

*** Operation in the 1920-1930 MHz band will comply with the power requirements set forth under Part 15 governing low power, unlicensed PCS devices. *See* Public Notice, "Experimental Licenses in the 1910-1930 MHz Band, " Mimeo No. 61800, released March 1, 1996 (allowing experimental testing in this band only for low-power, unlicensed PCS devices) ("Public Notice").

C. Emissions, Modulating Signal and Necessary Bandwidth

Motorola seeks to employ various modes of modulation, bandwidth and data rates. Nevertheless, none of these modes of operation would extend beyond the limits set forth for the bands listed above or exceed the maximum emissions envelope established in the existing authorization.

D. Locations of Proposed Operations

Motorola conducts its experimental operations primarily within 80 kilometers of its research and development facilities at Ft. Worth, Texas; and Arlington Heights, Illinois, but it also sought and received authority to conduct experimental operations at other locations within the United States. Because at the time Motorola submitted its application for an experimental license it could not determine the exact locations of the tests it would conduct over the two-year term of its license (and because it often must conduct tests on short notice at the locations of new or prospective customers located across the United States), Motorola requested and obtained blanket authority to operate on a nationwide basis (within the United States and its territories). Specifically, Motorola sought authority to test, demonstrate, and operate products: (1) at its own premises; (2) at the premises of entities working under Motorola's authorization in the design and development of the devices and related products; (3) at trade shows or non-residential exhibitions; and (4) at non-residential business, commercial, industrial, scientific or medical locations during the design, development and pre-production stages. Indeed, these operations are consistent with the requirements set forth in Section 2.803 of the Commission's marketing rules. *See Revision of Part 2 of the Commission's Rules Relating to the Marketing and Authorization of Radio Frequency Devices*, ET Docket No. 94-45, *Report and Order*, 12 FCC Rcd 4533 (1997), at ¶¶ 11-13, 19-20 ("*Marketing Rule Revisions*").

In addition, Motorola obtained authority to operate mobile devices at certain end user locations, including residential locations. Grant of such authority is in the public interest and convenience. The nature of the services and devices associated with wireless services—for example cellular and PCS services in particular—typically involve such usage and therefore should be tested at user locations. Nevertheless, Motorola does not conduct market studies under its license or unconditionally market, sell, or lease any prototype equipment to the public or to end-users. After the experimentation ceases, Motorola recalls and recovers all devices that are not in compliance with FCC regulations. If any different treatment becomes necessary during the course of its experimentation, Motorola would seek separate and additional authority from the agency.

Moreover, as directed in the conditions specified on its current license, and consistent with the *ERS Streamlining Order*, Motorola notifies the FCC of the specific details of each individual experiment, including location, number of base and mobile units, power, emissions designators, and any other pertinent technical information not specified by the blanket license before each test is conducted under its license. It also accepts and will continue to comply with all other conditions specified on its license (to the extent the FCC deems such conditions to continue to be applicable and not superseded by changes in its rules or requirements).

E. Equipment Installed

Motorola requires authority to operate a sufficient number of units to conduct compliance, performance, functionality, and acceptance testing of its products as well as to demonstrate its products.

Many of the consumer products Motorola manufactures are typically sold in quantities of hundreds of thousands. For example, the potential market for its products includes the approximately 180 million consumers that currently subscribe to cellular and cellular-like services in the United States. To obtain accurate data regarding real-world operations, Motorola must employ a sufficient number of units during its studies to simulate actual usage. It is able to conduct its experimentation, however, with 10 or fewer base stations and 200 or fewer mobiles per experiment/location and does not employ more than a total of 50 base stations and 750 mobiles overall for *all* of its experiments combined conducted under its authority. In other words, <u>50 base stations</u> and <u>750 mobiles</u> reflect the <u>maximum</u> number of unapproved or unlicensed units that are in operation at any given time under its authorization. As required, Motorola would seek separate and specific authority if more units were needed to conduct a particular experiment.

F. Owner and Operator of Equipment

Motorola understands that the FCC permits: (1) companies to enter into agreements and contracts to manufacturer new products; and (2) manufacturers to sell—but not deliver— products on a conditional basis to wholesalers and retailers. Motorola also understands that the FCC permits the operation of unintentional radiators for, among other things, compliance testing, demonstration at trade shows and other exhibitions with appropriate notices displayed, and evaluation of product performance and customer acceptability at the manufacturer's facilities or at certain non-residential sites during the developmental, design and pre-production stages. *See Marketing Rule Revisions* (changes to Section 2.803); *see also Memorandum Opinion and Order in GEN Docket No. 87-389*, 6 FCC Rcd 1683 (1991).

Notwithstanding these general rules, the FCC requires parties to seek authorization to use devices that normally require a license to operate. Such authority may be granted under the FCC's experimental rules set forth in Part 5 of the Code of Federal Regulations, 47 C.F.R. Part 5 (2004). Accordingly, Motorola obtained an experimental license to conduct experimental operations permitted under Part 5 of the Commission's rules. Those rules permit such operation provided that: (1) participants are advised that the service or device is granted under experimental authority and is strictly temporary; and (2) the devices are owned by the licensee.

Motorola also recognizes that the operation of any unapproved or unlicensed devices under experimentation must not cause harmful interference to authorized facilities. Should interference occur, Motorola immediately takes reasonable steps to resolve the interference, including if necessary discontinuing operation. To that end, Motorola advises entities using the equipment that permission to operate the equipment has been granted under experimental authority issued to Motorola, is strictly temporary, and may be canceled at any time. It also advises entities that operation is subject to the condition that the equipment may not cause harmful interference. Specifically, Motorola labels the equipment conspicuously as shown on the following page:

FCC STATEMENT
Permission to operate this device has been granted under experimental authority issued by the Federal Communications Commission to Motorola, 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 has not been authorized as required by the rules of the Federal Communications Commission. This device is not, and may not be, offered for sale or lease, or sold or leased, until authorization is obtained. Thus, the user does not hold a property right in the device and may be required to return the device.

In any event, Motorola submits that its experimental operations are unlikely to cause interference. First, Motorola plans to coordinate its operations with existing licensees in the areas of proposed operation. Indeed, it expects that many of its experiments will be conducted on behalf of and with the cooperation of existing licensees. Second, Motorola intends to monitor use of the relevant frequencies before commencing transmissions, and it will not operate if the frequencies are in use.

G. Contacts for Inquiries

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III. Conclusion

Motorola submits that renewal of its license would serve the public interest, convenience and necessity, as it would allow Motorola to enhance its ability to continue its on-going efforts to develop innovative products to support the information needs of the public.

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