NARRATIVE STATEMENT

By this application, Motorola, Inc. ("Motorola"), respectfully requests a special temporary authority ("STA"), beginning **July 1, 2006,** to test and demonstrate prototype equipment under development for export only operating in the 3300–3650 MHz band. The following information is provided in support of this request:

Purpose of Operation:

Motorola is actively involved in the research and development of hardware and software solutions associated with fourth generation ("4G") cellular and wireless data communications systems that will meet the IEEE 802.16 standard. In particular, Motorola is researching the capabilities and functionality of adaptive antenna arrays (including their propagation modeling, predictive channel equalization, and beam forming characteristics) to increase channel capacity. The experimentation would yield benefits for the development of 4G wireless data and voice capabilities incorporated not only into consumer products, but also public safety, government, and military communications systems.

Under the requested experimental authority, Motorola proposes to test and demonstrate equipment designed for export only. It does not intend to test equipment for non-governmental use in the United States. The 3300–3650 MHz band is used outside the U.S., and Motorola seeks to research and design equipment and applications optimized in that band to remain competitive with other manufacturers

Proposed Locations:

Motorola proposes to place experimental base stations within a 40 km radius of its corporate facilities at the following five locations. Mobiles would operate within a 40 km radius of the base stations. Grant of an experimental license within these boundaries will allow Motorola to operate at its various test sites and buildings in those three cities.

Schaumburg, IL	N42 04' 17.41"	W088 03' 21.3"	(NAD83)
Arlington Heights, IL	N42 08' 14.28"	W088 00' 5.69"	(NAD83)
Libertyville, IL	N42 17' 53.76"	W088 00' 14.51"	(NAD83)
Chicago, IL	N41 53' 24.96"	W087 37' 24.17"	(NAD83)
Austin, TX	N30 27' 20.99"	W097 45' 12.3"	(NAD83)
Fort Worth, TX	N32 50' 48.18"	W097 17' 22.92"	(NAD83)

Technical Specifications:

Application Type/Classification:	XE (Experimental Export Only)
Frequency Band	3300–3650 MHz.
Modulation:	OFDM, unmodulated carrier for reference only
Bandwidth / Emissions Designators:	20M0W7W, 10M0W7W, 7M00W7W, 5M00W7W, 10K0N0N
Antenna Data / Temp. Fixed Stations:	
Power Output (TPO):	16 Watts
Power Spectral Density:	32 µW/Hz
ERP / EIRP:	385 Watts / 640 Watts
Vertical Beamwidth:	3.8 degrees total
Horizontal. Beam Width:	120 degrees (-3dB points)
Gain:	16.0 dBi
Polarization:	Vertical / Cross (+/-45 degrees)
Antenna Data / Mobile Units:	
Power Output (TPO):	2 Watts
ERP:	3.2 Watts

The experimental system will deploy eight active elements, dividing the total transmit power among the elements in phase and ratio on a per-carrier (individual OFDM carrier) basis.

As the modulation bandwidth is scaleable, other emission modes may be utilized, but in no event will the emissions extend beyond the frequency bands requested. All power levels will comply with the limits set forth in the FCC's rules, including those relating to human exposure to radiation.

CISPR quasi-peak measurements are to be taken in the linear mode only.

Equipment to be Used:

Motorola proposes to employ only a limited number of units. It expects that it will be able to complete its experimentation and demonstration with a maximum of 12 temporary fixed . (2 temporary fixed stations at each location) and 240 mobile units (20 mobile units in the vicinity of each base station location). It will also limit the power, area of operation, and transmitting times of these units to the minimum necessary to evaluate the equipment.

Antenna / Antenna Structure Heights:

The antennas to be deployed under this authority will not extend more than six meters above the ground or, if mounted on an existing building, will not extend more than six meters above the building. If an antenna is mounted on an existing structure other than a building, it will be installed in accordance with FAA and FCC rules and regulations.

Restrictions on Operation:

Motorola understands that the FCC permits: (1) companies to enter into agreements and contracts to manufacturer products before they are approved; and (2) manufacturers to sell—but not deliver— unapproved products on a conditional basis to wholesalers and retailers. Motorola also understands that the FCC permits the operation of equipment for, among other things: (1) compliance testing; (2) demonstration at trade shows and other exhibitions with appropriate notices displayed; and (3) 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, § 2.803; Part 15 Revisions, 6 FCC Rcd 1683, 1685 (1991).

Notwithstanding these general rules, the FCC requires parties to seek authorization to use unapproved devices that will be operated at residential locations. 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 (2005). Accordingly, Motorola seeks this experimental license to conduct experimental operations at residential locations, as 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 does not propose to market, sell, or lease prototype equipment to end users or conduct a market study in conjunction with this test. Moreover, no fees will be charged to entities using the equipment during this test. After the experimentation ceases, Motorola will recall and recover all devices that do not comply with FCC regulations. If any different treatment becomes necessary during the course of its experimentation, Motorola will seek separate and additional authority from the agency.

Motorola also recognizes that the operation of any unapproved devices must not cause harmful interference to authorized facilities. It does not anticipate that such interference will occur, as the prototype equipment will operate at low power. Should interference occur, however, Motorola will immediately take reasonable steps to resolve the interference, including if necessary discontinuing operation. To that end, Motorola would advise 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. Specifically, Motorola proposes to label the equipment or user information conspicuously as follows:

> **.FCC STATEMENT**
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> 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 canceled at any time.
>
> 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.

Motorola will also monitor the spectrum for amateur radio activities and, in particular, minimize any transmission in the 3450–3460 portion of the band, which is used for weak signal work (in particular 3456MHz).

In addition, the equipment will utilize Transmit Power Control ("TPC") capabilities, which will serve to control the RF power to the minimum required to support communications on the channel for the particular path involved.

Public Interest:

Motorola submits that issuance of an STA is in the public interest, convenience, and necessity, as it will permit Motorola to develop innovative equipment that will accommodate the communications needs of users.

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