UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration
Washington, D.C. 20230

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Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
The Portals
445 Twelfth Street, S.W.
Room TW-A325
Washington, DC 20554

Re: Revision of Part 15 of the Commission's Rules Regarding Ultrawideband Transmission Systems, ET DocketNo. ~~980153~~ 98-153

Dear Ms. Salas:

Enclosed please find one original and four copies of the Comments of the National Telecommunications and Information Administration in the above-referenced docket. The comments were also submitted in electronic form on diskette to the Commission's copy contractor, International Transcription Service.

Please direct any questions you may have regarding this filing to the undersigned. Thank you for your cooperation.

Respectfully submitted,

Kathy D. Smith
Chief Counsel

cc: International Transcription Service

Enclosures

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Before the
FEDERAL COMMUNICATIONS COMMISSION
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In the Matter of	)	
	)	
Revision of Part 15 of the Commission's Rules	)	
Regarding Ultrawideband Transmission	)	ET Docket No. 98-153
Systems	)	

COMMENTS OF THE NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION

The National Telecommunications and Information Administration (NTIA), an Executive Branch agency within the Department of Commerce, manages and authorizes the Federal Government's use of the radio frequency spectrum. NTIA is the President's principal adviser on domestic and international telecommunications policy, including policies relating to the Nation's economic and technological advancement in telecommunications. Accordingly, NTIA makes recommendations regarding telecommunications policies and presents Executive Branch views on telecommunications matters to the Congress, the Federal Communications Commission (Commission or FCC), and the public. NTIA and the FCC jointly manage the spectrum used in the United States, including portions potentially affected by Ultrawideband (UWB) technologies. NTIA's responsibilities include both fostering new technology and assuring the Federal agencies access to the spectrum to perform their critical missions free from interference.

NTIA commends the Commission for its efforts in this Notice of Proposed Rule Making (NPRM) to establish rules that may lead to the introduction of new products incorporating UWB

technology in the above-captioned proceeding.[1] UWB technology can be used in a variety of applications including communications, imaging, and ranging. However, the establishment of such rules must provide protection to critical Federal radiocommunication and safety systems, protection that is not yet apparent.

In the UWB NPRM the FCC seeks information on how to make sure that critical Federal systems operating in the restricted bands established by Part 15 of the FCC's Rules[2] are protected from harmful interference. The FCC recognizes the complexity of the interaction between UWB and conventional radiocommunication systems by acknowledging that further testing and analysis will be needed before they could authorize UWB transmission systems to operate in the bands used for these protected services.[3] The Commission stressed, in particular, the need for further measurements and analyses in the bands below 2 GHz to protect the Global Positioning System (GPS) receivers, which will be used for navigation of all types, accurate timing, and automatic landing of aircraft.[4] The Commission also states that,

> We welcome these testing programs and believe that the information they yield will be important for developing emission limits for UWB devices that will protect other radio services against interference. Commission staff will monitor the progress of these tests. . . . We encourage parties to submit the test results into the record in this proceeding by October 30, 2000. At the appropriate time, we will issue

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[1] *Revisions of Part 15 of the Commission's Rules Regarding Ultra-Wideband Transmission Systems*, Notice of Proposed Rule Making, ET Docket No. 98-153, FCC 00-163 (rel. May 11, 2000) (hereinafter "UWB NPRM").

[2] Part 15 permits the operation of certain radio frequency devices without a license from the FCC or the need for frequency coordination (47 C.F.R. § 15.1). The technical standards contained in Part 15 seek to ensure that there is a low probability that unlicensed devices will cause harmful interference to other users of the radio spectrum (47 C.F.R. § 15.5). Within the Part 15 Rules, intentional radiators (devices that transmit a telecommunication signal) are permitted to operate under a set of limits (47 C.F.R. §15.209) that allow desired signal emissions in certain frequency bands. They are not permitted to operate in certain sensitive or safety-related frequency bands, which are designated as restricted bands (47 C.F.R. §15.205). UWB devices are intentional radiators under Part 15 Rules.

[3] *See* UWB NPRM, *supra* note 1, at § 30.

[4] *Id.*

a public notice to provide an opportunity to provide comments and replies on the test results and analyses.[5]

NTIA agrees that the technical questions raised in the FCC's UWB NPRM are complex. NTIA has embarked, therefore, on two measurement programs to determine how UWB devices may impact conventional narrowband devices operating in the restricted bands. The first program will examine the emissions from several UWB devices to determine how best to characterize the many types of UWB signals and to describe procedures and methods for measuring of UWB signals for developing operable certification standards and criteria for them. These measurements also will include both open-system and closed-system tests of the interference impact of UWB devices on several sensitive devices to determine permissible power levels and corresponding required separation distances and an assessment of the impact of aggregates of several UWB devices. These are triage-like interference assessments designed to determine under what conditions additional measurements or analyses, if any, need to be made to develop rules for UWB systems that both provide the benefits of the UWB technology to the public and protect critical Federal systems currently operating in the environment.[6]

NTIA has identified pertinent system characteristics and is developing operational scenarios for conducting susceptibility studies on several systems that operate in restricted bands. Systems to be analyzed for compatibility with UWB emissions include: Search and Rescue Satellites (SARSAT) operating at 406.025 MHz; Distance Measuring Equipment (DME),

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[5] *Id.* at § 31.

[6] *See* "Notice, Request for Comments on Ultrawideband Systems Test Plan" (UWB Notice), National Telecommunications and Information Administration, Department of Commerce, 65 Fed. Reg. 40614 (June 30, 2000). The text of the notice, the proposed test plan (Master Plan) and the ITS measurement program are available on NTIA's website at <http://www.ntia.doc.gov/osmhome/uwbtestplan/>. NTIA expects to complete these measurements by October 30, 2000.

beacons and transponders, operating in the 960-1215 MHz band; Air Traffic Control Radar Beacon System (ATCRBS), interrogator and transponders, operating at 1030 and 1090 MHz; Air Route Surveillance Radars (ARSRs) operating in the 1215-1370 MHz band; SARSAT Earth stations operating at 1544.5 MHz; meteorological satellite downlinks operating in the 1670-1710 MHz band; Airport Surveillance Radars (ASRs) operating in the 2700-2900 MHz band; Next Generation Weather Radars (NEXRADs, WSR-88D), meteorological radars operating in the 2700–3000 MHz band; fixed-satellite service Earth station receivers operating in the 3700-4200 MHz band; aircraft altimeters operating in the 4200-4400 MHz band; and Microwave Landing System (MLS) operating in the 5030-5091 MHz band.

The second NTIA measurement program, will include interference assessments of several GPS receivers. On August 14, 2000, an announcement of NTIA's *Measurement Plan to Determine the Potential Interference Impact to Global Positioning System Receivers From Ultrawideband Transmission Systems* was published in the Federal Register.[7] The measurements described in this document will define the maximum level of UWB emissions for each operational scenario identified to calculate the maximum permissible output power of UWB transmission systems, under given parameter combinations, that will ensure compatibility with GPS receivers. The operational scenarios will be dependent upon both existing and projected GPS and UWB applications and will take into consideration circumstances involving both single and multiple UWB transmission systems. For each application, a link budget will be developed under assumptions or known conditions defined by the particular operational scenario. Repre-

[7] *See* "Notice; Request for Comments on Global Positioning System/Ultrawideband Measurement Plan, 65 Fed. Reg.49544 (Aug. 14, 2000). The text of the notice, the proposed ITS measurement program are available on NTIA's website at <<http://www.ntia.doc.gov/osmhome/uwbtestplan/gpstestfr.htm>>. Please note that this plan contains a December 30, 2000, completion date. We are investigating additional funding that could allow us to increase the breadth of the testing while accelerating the process to allow completion by October 30, 2000.

sentatives from the impacted Federal agencies, GPS equipment manufacturers and users, and UWB equipment manufacturers will be consulted in the development of UWB-to-GPS operational scenarios. A schedule for the UWB-to-GPS measurements is included in the plan. NTIA will file the measurement reports, and additional comments and analyses soon after the measurements are completed.

NTIA will provide the FCC and the public measurement results of these two programs and additional technical comments soon after they are completed. These measurement results are essential in establishing operating parameters that would allow UWB devices to safely operate within the restricted bands. NTIA as joint manager of the spectrum that may be used by UWB devices, will reserve its decision on whether unlicensed operation of UWB devices can be permitted in the restricted bands until detailed evaluations of the measurements and analyses have been completed.

Thank you for consideration of these views.

Respectfully submitted,

Kathy D. Smith
Chief Counsel

Gregory L. Rohde
Assistant Secretary for
Communications and Information

William T. Hatch
Office of Spectrum Management
Associate Administrator

Paul C. Roosa, Jr
Program Manager

National Telecommunications and
Information Administration
U.S. Department of Commerce
Room 4713
1401 Constitution Avenue, N.W.
Washington, DC 20230
(202) 482-1816

September 12, 2000