

Douglas Young - STA,Auburn University, File # 0138-EX-ST-2003

From: Douglas Young
To: Jeffrey Kam
Date: 4/4/2003 10:52 AM
Subject: STA,Auburn University, File # 0138-EX-ST-

Jeff,

Attached is a coordination for the subject UWB STA.

Doug

Applicant: Auburn University
File Number: 0138-EX-ST-2003

Start Date: 04/25/2003 **End Date:** 10/24/2003

Why STA Is Necessary

Use of PAD UWB transceivers in an indoor laboratory experiment.

Purpose of Operation

To conduct university research in UWB technology.

Contact: Sue Pash

Phone: 540-659-0824

Email: sue.pash@timedomain.com

Nature of Service: EXPERIMENTAL

Class of Station: XD MO

Call Sign: NEW

Station Locations

MOBILE: 162 Broun Hall/ECE Dept., Auburn, AL, within 0.3 km, centered around NL 32-36-04; WL 85-29-15

Frequency Information

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1000-3000 MHz	MO	2G00P1D	52 uW (ERP)	2 %
1000-3000 MHz	MO	2G00P0N	52 uW (ERP)	2 %

Time Domain Corporation
Experimental STA Request
April 4, 2003
File No. 0138-EX-ST-2003

Exhibit 1

Signal Description

This request seeks authority to demonstrate prototype equipment that uses the “time modulated” ultra wideband (UWB) technology developed by Time Domain Corporation (“Time Domain”). The device to be exercised is a PulsON™ Application Demonstrator (PAD). The PAD is a laboratory evaluation device that is a test device only. Our access to this device is pursuant to an agreement with an agreement with Time Domain for the evaluation and development of UWB technology. The PAD is not a device to be marketed.

This device generates a signal that is pulse position modulated. The position of the modulated pulse employed by this device varies randomly in time so as to produce a spectrum that approximates gaussian noise. If an emission designator were to be applied to this device, Time Domain believes that 2G00PID would be descriptive of the signal as modulated. If unmodulated for radar applications, the emission designator would be 2G00P0N. The nominal center frequency of the signal is 1.8 to 1.9 GHz. The radiated power of each device is below the general limits set forth in Part 15. For the purpose of this STA, the power spectral density of the device should be specified as < -71.25 dBW/MHz. The total power output from the transmitter is 100 microwatts. The radiated power of the device is 85 microwatts WIRP (52 microwatts ERP) or less.

The PAD will use an omni-directional Time Domain Diamond dipole antenna. Note that this antenna has virtually no gain across the spectrum of the transmitted signal, unlike a classic reference dipole designed.

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Exhibit 2

Necessary Bandwidth

The necessary bandwidth for the purposes of this STA request should be considered to be 2 GHz. In the frequency domain, the signal would have a nominal center frequency at 2 GHz with energy extending 1 GHz above and below the nominal center. The necessary bandwidth for these purposes has been determined experimentally through laboratory measurements.

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Exhibit 3

Operational and Geographic Information

This request seeks a special temporary authorization to demonstrate prototype ultra wideband (“UWB”) units as follows:

Date: April 25, 2003 thru October 24, 2003	Time: 24 Hours	Location: Auburn University 162 Broun Hall/ECE Dept. Auburn, AL 36849
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Purpose: *To use PAD UWB transceivers in an indoor laboratory experiment.*

Number of units: 2 PADs

Antenna gain: nominally 0 dB

Radiated power: less than – 73dBW/MHz

Note: The radiated emissions level will not exceed the limits that would apply to an “unintentional” radiator under the general Part 15 limits set forth in Section 15.109 of the Commission’s Rules.

This device was designed and fabricated before the release of the FCC’s 1st Report and Order on UWB, FCC 02-48.

[NOTE: If operations are to be conducted entirely indoors, you should state this here as part of the request. Indoor only applications generally raise fewer coordination concerns than do those proposing outdoor operations.]

Note: According to the FCC TOWAIR database, there are no airports within 8 kilometers (5 miles) of 162 Broun Hall/ECE Dept., Auburn, AL 36849. The Commission has heretofore found it to be in the public interest to explore the development of ultra-wideband technology. *See FCC First Report and Order, FCC 02-48.*

The purpose of the operations to be conducted under this requested authority will be to evaluate and demonstrate UWB as a potential technology in support of products that our company is considering developing for commercial, Federal Government, and international customers. Devices for the U.S. commercial market would be designed and certified in accordance with FCC regulations.

Contact person during hours of operation at location:

R. Wayne Johnson
Director, Information Technology Peak of Excellence
Auburn University
162 Broun Hall/ECE Dept.
Auburn, AL 36849-5201
334-844-1880
Johnson@eng.auburn.edu

Contact person regarding this request:

Sue Pash
Office Manager
Time Domain Corporation
54 Christopher Way
Stafford, VA 22554
Phone: (540) 659-0824
Cell: (202) 438-1956
Fax: (540) 658-9165
E-mail: sue.pash@timedomain.com

Public interest showing:

The Commission has heretofore found it to be in the public interest to explore the development of ultra-wideband technology. *See FCC First Report and Order, FCC 02-48.*