

United States of America
FEDERAL COMMUNICATIONS COMMISSION
EXPERIMENTAL
SPECIAL TEMPORARY AUTHORIZATION

EXPERIMENTAL
(Nature of Service)

W A 2 X I Z
(Call Sign)

XC MO
(Class of station)

S-2820-EX-97
(File number)

NAME TIME DOMAIN SYSTEMS, INC.
within 65 km radius of: 34-43-20 NL, 86-40-16 WL (Huntsville, AL)
(Location of station)

Special Temporary Authority is hereby granted to operate the radio transmitting apparatus described below:

Frequency (MHz)	Authorized Power (ERP)	Emission Designator
650	150 nW	325MXXX
2000	3.5 mW	1G00XXX

Purpose of Operation: Test and development of ultra wideband technology under U.S. Army contract.

This special temporary authorization is granted upon the express condition that it may be terminated by the Commission at any time without advance notice or hearing if in its discretion the need for such action arises. Nothing contained herein shall be construed as a finding by the Commission that the authority herein granted is or will be in the public interest beyond the express terms hereof.

This special temporary authorization shall not vest in the grantee any right to operate the station nor any right in the use of the frequencies designated in the authorization beyond the term hereof, nor in any other manner than authorized herein. Neither the authorization nor the right granted hereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934. This authorization is subject to the right of use of control by the Government of the United States conferred by Section 706 of the Communications Act of 1934.

This authorization effective April 11, 1997 and
will expire 3:00 A.M. EST. October 11, 1997



Time Domain Systems, Inc.

ORIGINAL

February 10, 1997

VIA OVER NIGHT DELIVERY
SENT THROUGH PITTSBURGH

Mr. Paul Marrangoni
Chief, Frequency Liaison
Office of Engineering and Technology
Federal Communications Commission
2000 M Street, NW, Mail Code 1300E1
Washington, D.C. 20554

Care Of:

Mellon Bank
Three Mellon Bank Center
525 William Penn Way
27th Floor, Room 15333-2713
Pittsburgh, PA 15259-0001

ATTN: Federal Communications Commission Lockbox Shift Supervisor

RE: Request for Special Temporary Authority

Dear Mr. Marrangoni:

Pursuant to section 5.56 of the Commission's rules, 47 C.F.R. §5.56 (1995), Time Domain Systems, Inc., requests a Special Temporary Authority.

In accordance with the FCC's Fee Schedule (Fee Code EAE), a check for \$45 is enclosed, as well as FCC form 159.

In support of this request, the following is shown:

1) Applicant's Name and Address:

Time Domain Systems, Inc. ("TDSI")
Suite 100, 6700 Odyssey Drive
Huntsville, AL 35806
Contact: Paul Withington
Telephone: (205) 922-0384
Facsimile: (205) 922-0387

2) Need for Special Action:

An authorization is requested to support ongoing research for the United States Department of Defense (US Army CECOM, contract number: DAAB07-95-C-D317.) and other government agencies, as well as for foreign and domestic nonfederal government applications of ultra-wideband radio technology, including uses by law enforcement agencies.

Antenna: Joe DiSerra
(908) 427-4007

-- INNOVATORS IN ULTRA WIDEBAND TECHNOLOGIES --

6700 ODYSSEY DRIVE • SUITE 100 • HUNTSVILLE, ALABAMA 35806 • 205-922-0384

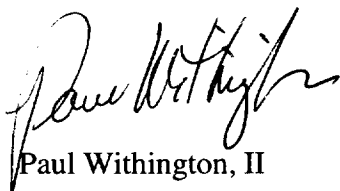
- 3) Type of Operation
Temporary, fixed, and portable
- 4) Purpose of Operation:
Product development, demonstration and testing.
- 5) Date of Operation:
2/20/97 Through 8/19/98 ⁹⁷
- 6) Class of Station:
Experimental ^{65 km}
- 7) Location of Proposed Operation:
Within a 40 miles radius of 34° 43.331' North / 86° 40.272' West (Huntsville, Alabama). ^{20"} ^{16"}
- 8) Equipment to be Used:
Custom fabricated ultra-wideband impulse radio
- 9) Frequencies Desired:
- | Application | Frequency ± 3 dB Bandwidth | Authorized Power |
|--------------------|----------------------------|------------------|
| Government Systems | 650 MHz ± 325 MHz | < 10 µW/MHz |
| Government Systems | 2 GHz ± 1 GHz | < 20 µW/MHz |
| Non-government | 2 GHz ± 1 GHz | < 2 µW/MHz |
- 10) Effective Radiated Power:
Not to exceed
For 650 MHz ± 325 MHz government systems: 150 µW/MHz
For 2 GHz ± 1 GHz government systems: 3.5 mW/MHz
For 2 GHz ± 1 GHz non-government systems: 20 µW/MHz
- 11) Transmitter Power:
See (9) above
- 12) Type of Emission:
A series of ultra-wideband RF pulses varied in time by a pseudo-random and pure random time hopping sequences. Ultra-wideband signals have relative bandwidths in excess of 25% of the center frequency (IEEE definition). Time Domain Systems typically uses signal with relative RF bandwidths greater than 75%. The pseudo-random and pure random time hopping randomizes the signal in both the time and frequency domains, so that it has the appearance of white noise. There is no emissions designator for these types of signals.
- 13) Antenna Height
All operations will be conducted in accordance with Part 17 of the FCC regulations, and no operations will be conducted that would require notifying the FAA. Most operations will be less than 6 meters above ground or above an existing manmade structure.

In accordance with Section 1.2002 (1993), Time Domain Systems, Inc., hereby certifies that it, its officers and directors, and any party with a 5 percent or greater interest in this

request for special temporary authority is not subject to a denial of the Federal benefits requested herein pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. §853 (a).

Time Domain Systems Inc., will take great care to ensure that harmful interference does not occur. When operating within the immediate Huntsville area, we will limit EIRP to well below the maximums stated. Given the very low power spectral density of the ultra wideband signals, we do not believe there is a significant likelihood of interference. Nonetheless, we are certainly willing to coordinate with other licensees in the region, particularly those in any safety services, as an additional step to decrease the possibility that there could be interference from our experimental efforts.

Yours truly,

A handwritten signature in black ink, appearing to read "Paul Withington, II". The signature is fluid and cursive, with a large initial "P" and a long, sweeping underline.

Paul Withington, II

cc: David E. Hilliard, Esq.

WILEY, REIN & FIELDING

ORIGINAL

1776 K STREET, N. W.
WASHINGTON, D. C. 20006
(202) 429-7000
February 11, 1997

DAVID E. HILLIARD
(202) 429-7058

FACSIMILE
(202) 429-7049

Federal Communications Commission
Experimental Radio Services
P. O. Box 358320
Pittsburgh, PA 15251-5315

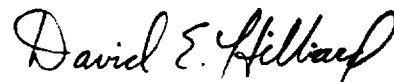
Re: Time Domain Systems, Inc.
Request for Special Temporary Authority

Ladies and Gentlemen:

Transmitted herewith on behalf of Time Domain Systems, Inc. is its Request for Special Temporary Authority.

FCC Form 159 and a check payable to the FCC in the amount of \$45 for the filing fees are also enclosed. Should any questions arise in connection with this application, please contact me.

Respectfully,



David E. Hilliard

DEH/bap

From: <DHilliard@wrf.com>
To: J4.J4(chuie)
Date: 2/26/97 3:41pm
Subject: Time Domain Systems - STA Application

The following information is supplied in response to your request for a contact and phone number regarding the government contract referenced in the STA request submitted earlier this month.

The Contract Office Technical Representative ("COTR") is:
Joe Inserra
CECOM
US Army
Ft. Monmouth, NJ
(908) 427-4107

Please call me at 202-429-7058 if you have any further questions.

This message is intended only for the use of the addressee and may contain information that is PRIVILEGED and CONFIDENTIAL, and/or may contain ATTORNEY WORK PRODUCT.

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Thank you.
