

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@po.state.ct.us

Web Site: www.state.ct.us/csc/index.htm

May 10, 2002

Julie M. Donaldson, Esq.
Hurwitz & Sagarin LLC
147 North Broad Street
P.O. Box 112
Milford, CT 06460-0112

RE: **EM-SBA-115-020418** - SBA Towers, Inc. notice of intent to modify an existing telecommunications facility located at 229 Cheshire Road, Prospect, Connecticut.

Dear Attorney Donaldson:

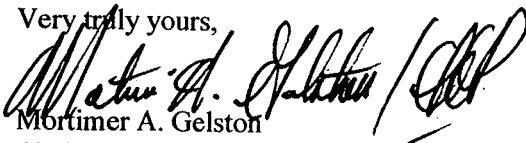
At a public meeting held on May 7, 2002, the Connecticut Siting Council (Council) acknowledged your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies.

The proposed modifications are to be implemented as specified here and in your notice dated April 18, 2002. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,


Mortimer A. Gelston
Chairman

MAG/RKE/laf

c: Honorable Robert J. Chatfield, Mayor, Town of Prospect
William J. Donovan, Zoning Enforcement Officer, Town of Prospect

HURWITZ & SAGARIN LLC

April 18, 2002

S. Derek Phelps
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: Notice of Exempt Modifications

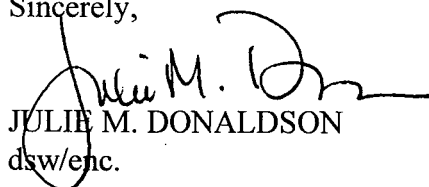
171 South Broad Street, Stonington, Connecticut
1825 South Main Street, Middletown, Connecticut
229 Cheshire Road, Prospect, Connecticut
106 Willenbrock Road, Oxford, Connecticut
540 Cherry Brook Road, Canton, Connecticut
267 Norwich Westerly Road, North Stonington, Connecticut

Dear Mr. Phelps:

On behalf of SBA Properties, Inc. ("SBA"), I am pleased to submit the above referenced exempt modification applications. Enclosed are originals plus twenty (20) copies of each petition requesting a determination that SBA's co-location on the telecommunications facilities noted satisfies the requirements set forth in R.C.S.A. §16-50j-72(b)(2). Checks in the amount of \$500.00 each to cover filing fee for these petitions are also enclosed.

The appropriate town officials have been sent notice of these petitions by certified mail.

Sincerely,


JULIE M. DONALDSON
dsw/enc.

HURWITZ & SAGARIN LLC

April 18, 2002

S. Derek Phelps
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

RECEIVED

APR 18 2002

CONNECTICUT
SITING COUNCIL

Re: **Notice of Exempt Modification
SBA Telecommunications Facility
229 Cheshire Road
Prospect, Connecticut**

Dear Mr. Phelps:

SBA Towers, Inc. ("SBA") hereby requests acknowledgment that the proposed co-location of AT&T Wireless PCS, LLC d/b/a AT&T Wireless ("AT&T Wireless") on a telecommunications tower owned by SBA and located at 229 Cheshire Road, Prospect, Connecticut ("Cheshire Road Facility") constitutes an exempt modification pursuant to the Public Utility Environmental Standards Act, Connecticut General Statutes Section 16-50g et. seq. ("PUESA") and Section 16-50j-72(b) of the Regulations of Connecticut State Agencies ("R.C.S.A.") adopted pursuant to PUESA. In accordance with R.C.S.A. Section 16-50j-73, a copy of this letter has been sent to Robert J. Chatfield, the Mayor of Prospect.

SBA and AT&T Wireless have agreed to the shared use of the Cheshire Road Facility, as detailed below.

The Cheshire Road Facility

The Cheshire Road Facility consists of a 150 foot monopole within a site compound which is surrounded by a chain link fence. The facility currently supports the antenna arrays and related equipment of Sprint PCS. The tower and Sprint's co-location on the tower was approved by the Town of Prospect on October 20, 1999.

AT&T Wireless' Facility

AT&T Wireless will install 6 panel antennas at an antenna center line height of approximately 127 feet. A structural integrity report, attached as Exhibit A, was generated by Chazen Engineering and Land Surveying Co. P.C. and confirms that the tower is structurally capable of supporting AT&T Wireless' proposed antennas. AT&T Wireless will also install associated equipment cabinets (2 proposed, 2 future, each 76"H x 30"W x 30" D) on a concrete pad within the existing fenced compound.


AT&T Wireless' Facility Constitutes An Exempt Modification

For the following reasons, the proposed modifications to the Cheshire Road Facility meet the exempt modification criteria set forth in R.C.S.A. Section 16-50j-72(b)(2):

1. As evidenced by the attached Tower Elevation Drawing (Exhibit B), the proposed modification will not increase the height of the tower as AT&T Wireless' antennas will be installed at a center line height of approximately 127 feet.
2. As evidenced by the attached Site Plan Drawing (Exhibit B), the installation of AT&T Wireless' equipment within the existing fenced compound will not require an extension of the site boundaries.
3. The proposed modifications will not increase the noise levels at the existing facility by six decibels or more.
4. As set forth in the Emissions Report prepared by C Square Systems, Inc., attached as Exhibit C, the operation of the additional antennas will not increase the total radio frequency (RF) power density, measured at the site boundary, to a level at or above the standard adopted by the Connecticut Department of Environmental Protection as set forth in Section 22a-162 of the Connecticut General Statutes and MPE limits established by the Federal Communications Commission. The "worst-case" percentage for RF Power density for a point at the tower base is calculated to be 4.61% for AT&T Wireless' antennas. The calculated "worst case" cumulative RF power density at the site is only 6.97% of the applicable standard.

For the foregoing reasons, SBA respectfully submits that the proposed addition of AT&T Wireless' antenna and equipment at the Cheshire Road Facility constitutes an exempt modification under R.C.S.A. Section 16-50j-72(b)(2)

Respectfully Submitted,


Julie M. Donaldson

cc: Robert J. Chatfield, Mayor Town of Prospect
Harold Hewett, Bechtel (CT-913-008-625)
Mark Roberts, SBA
Christopher Fisher Esq., Cuddy & Feder & Worby

CHAZEN ENGINEERING & LAND SURVEYING CO., P.C.

Dutchess County Office
Phone: (845) 454-3980

New England Office
Phone: (781) 556-1037

20 Gurley Avenue, Troy, New York 12182
Phone: (518) 235-8050 Fax: (518) 235-8051
Email: albany@chazencompanies.com

Orange County Office
Phone: (845) 567-1133

North Country Office
Phone: (518) 812-0513

April 5, 2002

Mr. Randy Freschlin
SBA Network Services, Inc.
80 Eastern Boulevard
Glastonbury, CT 06033

Re: Structural Review of the East Prospect Monopole
TCC Job Number: NE028.00
SBA Site No.: 10125-036
AWS Site No.: CT913-008-625

Dear Mr. Freschlin:

As requested, The Chazen Companies (TCC) has performed a structural review of the above referenced monopole located in the Town of East Prospect, New Haven County, Connecticut. Our review is based on information provided by SBA and design drawings by Engineered Endeavors Incorporated, dated October 18, 1999.

Based on our review, the monopole is 150 feet tall and was designed to support three (3) antenna arrays consisting of twelve (12) DB980 Panel antennas at elevations of 150 feet, 140 feet, and 130 feet above ground level (AGL).

Currently there are six (6) Sprint panel antennas at 147 feet AGL installed on the monopole and a planned installation of twelve (12) Decibel DB844H90 panel antennas at 137 feet AGL by Verizon Wireless. AT&T Wireless proposes to install six (6) Allgon 7250 panel antennas at an elevation of 127 feet AGL.

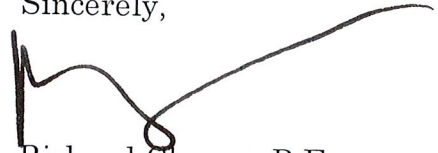
The design drawings provided indicate that the monopole was designed for a basic wind speed of 89.25 mph and ½" radial ice with wind/ice reduction. The basic wind speed specified in ANSI/TIA/EIA-222-F *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures* is 85 mph. Revision F of this standard is the newest revision, and thus meets or exceeds the requirements of the previous revision, which is referenced in the 1996 BOCA National Building Code. The Connecticut State Building Code requires that television and radio towers be

designed in accordance with Section 3108.4 of the 1996 BOCA National Building Code. Therefore TCC can conclude that the monopole design meets or exceeds the Connecticut State Building Code.

Based upon this information, TCC has determined that the existing monopole and its foundation are capable of supporting the existing, planned, and proposed antennas, provided the monopole and foundation were constructed in accordance with all applicable local, state, and federal codes.

If you have any questions, or require any additional information please do not hesitate to contact this office.

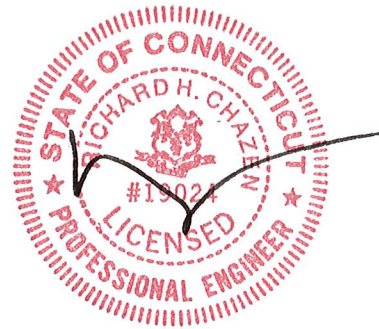
Sincerely,

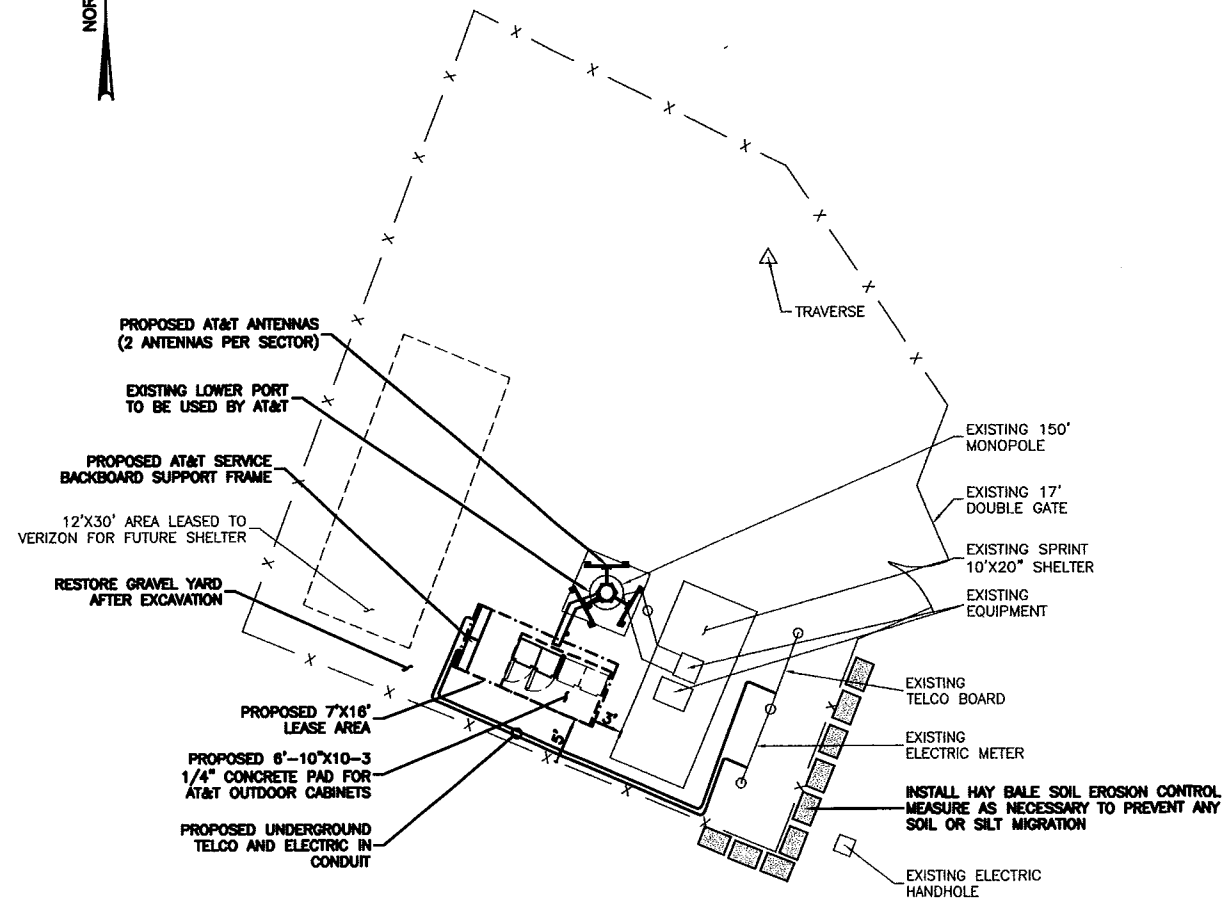


Richard Chazen, P.E.
Principal

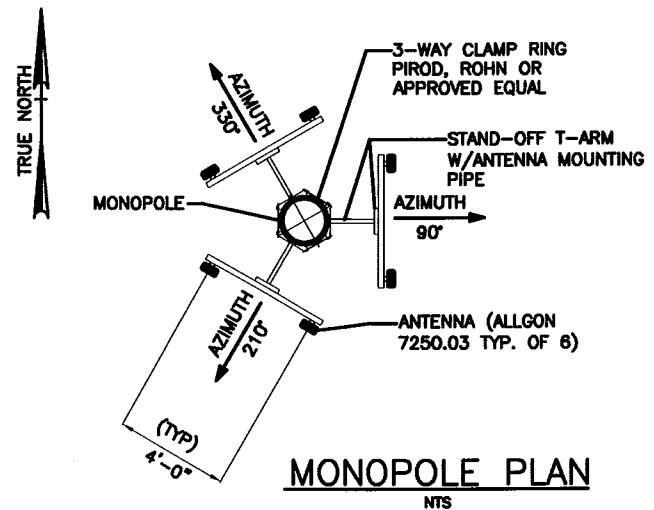
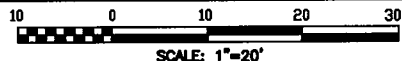
ksp/

cc: Kelly Libolt, TCC
Kelly Phillips, TCC
File

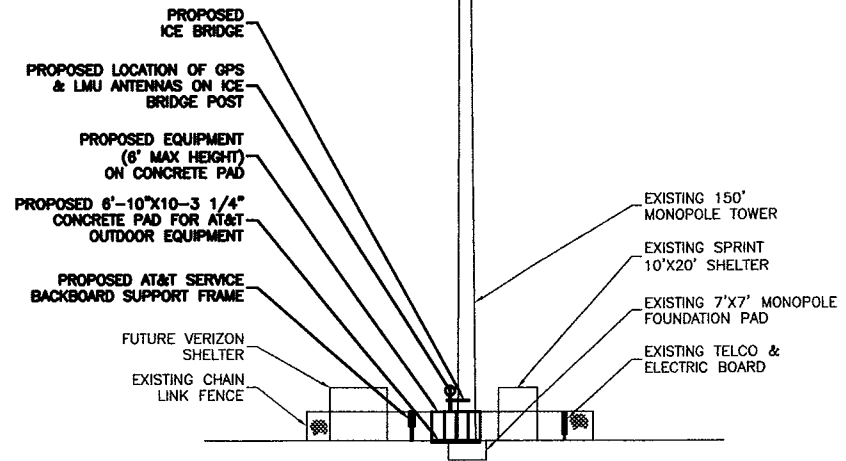
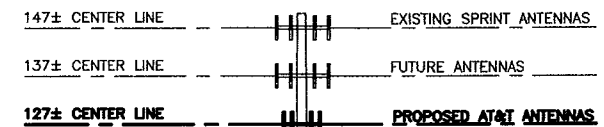




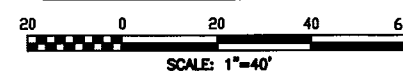
EQUIPMENT LAYOUT PLAN



MONOPOLE PLAN
NTS



SOUTH ELEVATION



Xref: M-BASE.dwg, BORD.dwg
 Layer: State
 By: MJS
 Plot: WCHRSTOPHE

N:\projects\136501\Site\Council\E25201.dwg
 Title: 136501-12.dwg
 Date: 12/28/2006

Goodkind & O'Dea, Inc.
 A Dewberry Company
 59 Elm Street, Suite 101
 New Haven, CT 06510
 p. (203) 776-2277
 f. (203) 776-2288

Engineers
 Planners
 Surveyors

EAST PROSPECT
 229 CHESHIRE ROAD
 PROSPECT, CONNECTICUT 06712

SBA TOWERS, INC.

80 EASTERN BOULEVARD
 GLASTONBURY, CONNECTICUT
 (880) 659-9101
 MARK ROBERTS

ONE TOWN CENTER RD, 3RD FL.
 BOCA RATON, FL 33486
 (561) 995-7670

△				
△				
△	ISSUE FOR SITING COUNCIL	WLC	JSG	FDK
△	PRELIMINARY ISSUE FOR SITING COUNCIL	MAS	JSG	FDK
NO.	DATE	REVISIONS	BY	CHK
				APPD
SCALE AS NOTED		DESIGNED JSG	DRAWN MJS	

SITE NUMBER 913-008-625
EAST PROSPECT
LAYOUT PLAN AND ELEVATION

DRAWING NUMBER	REV
CT-625Z1	0



C Squared Systems, LLC
13 Forest Drive
East Kingston, NH 03827
Phone 603-770-3143
Email:

scott.pollister@csquaredsystems.com

Calculated Radio Frequency Emissions

Site Number 913-008-625

229 Cheshire Road, Prospect, CT

SBA Network Services, Inc



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1. Introduction

The purpose of this report is to investigate compliance with applicable federal, state and local EMF regulations for the proposed 150-foot wireless telecommunications facility at 229 Cheshire Road in Prospect, CT.

These calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. As a result, the predicted signal levels are much more conservative (higher) than the actual signal levels will be from the finished installation.

The results will be listed as a percentage of current Maximum Permissible Exposure (% MPE) limits as listed in the FCC OET Bulletin 65 Edition 97-01. Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ emitted is called the power density. The general population exposure limit for the cellular band is $580 \mu\text{W}/\text{cm}^2$, and the general population exposure limit for the PCS band is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

2. Site Data

Carrier	Freq (MHz)	# of Channels per Sector	# of Sectors	Height of Antenna	Power per Channel (Watts ERP)
AT&T	1900	16	3	127'	250
Sprint	1900	11	3	147'	265

3. RF Exposure Prediction Methods

The FCC has established the following equation to estimate the power density in the far-field region.

$$\text{Power Density} = \left(\frac{4 \times \text{EIRP}}{4 \times \pi \times R^2} \right) \times \text{Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial distance = $\sqrt{H^2 + V^2}$

H = Horizontal distance from antenna

V = Vertical distance from bottom of antenna

Maximum Off beam loss is limited to 10 dB to insure a conservative result

4. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include limits for Maximum Permissible Exposure (MPE) for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based on exposure limits recommended by the National Council on Radiation Protection and Measurements (NCRP), the exposure limits developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The attachments labeled Table 1 and Figure 1 are excerpts from OET Bulletin 65 and define the Maximum Exposure Limit. As shown in these excerpts, each frequency band has different exposure limits, requiring power density to be reported as a percent of Maximum Permissible Exposure (MPE) when dealing with carriers transmitting in different frequency bands.

5. Calculation Results

The calculated results indicate that radio frequency emissions expected from this installation are significantly less than the regulatory emission limits for public exposure. Specific maximum power densities and their percentage of the limits are listed below for each individual carrier.

Maximum Power Densities for Each Antenna

Carrier	Calculated Maximum Power Density ($\mu\text{W}/\text{cm}^2$)	MPE Limit ($\mu\text{W}/\text{cm}^2$)	Max % Limits
AT&T	46.1	1000	4.61
Sprint	23.6	1000	2.36

Cumulative Percent of Maximum Permissible Exposure

	Max % Limits
Cumulative	6.97

6. Conclusion

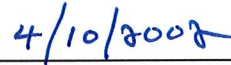
All of the calculations in this report were computed for the 150-foot wireless facility in Prospect, CT. As can be seen from the above tables and attachments, the expected aggregate radio frequency emissions from the proposed installation are extremely low and well below the regulatory emission limits for general public exposure, even under very conservative assumptions. The highest aggregate percent Maximum Permissible Exposure is 6.97% of the FCC limits for general public as outlined in FCC OET Bulletin 65 Edition 97-01.

7. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations were computed in accordance with and using techniques in compliance with ANSI/IEEE Std. C95.3, ANSI/IEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.



Scott Pollister
C Squared Systems



Date

References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission
Office of Engineering & Technology

ANSI C95.1-1982, American National Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz. IEEE-SA Standards Board

IEEE Std C95.3-1991 (Reaff 1997), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave. IEEE-SA Standards Board
10.

Table 1. LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)**(A) Limits for Occupational/Controlled Exposure**

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

NOTE 1: **Occupational/controlled** limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2: **General population/uncontrolled** exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

Figure 1. FCC Limits for Maximum Permissible Exposure (MPE)
Plane-wave Equivalent Power Density

