

Exhibit 1

NextNet Wireless, Inc.

MMDS/ITFS Experimental License

Proposal

121-0001-9001

NextNet Expedience™ Product

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1 INTRODUCTION

This document is a proposal for obtaining an experimental license from the FCC Mass Media Bureau Video Services Division. This is for alpha testing of the high-speed fixed wireless system being developed by Nextnet Wireless, Inc. Alpha testing is the initial test of the system deployed in an actual real world field environment.

1.1 Overview

NextNet Expedience™ is an end-to-end, high-speed wireless network access system designed for the ITFS and MMDS frequency band. It is a local loop wireless alternative offering business and residential users high speed access to network communication systems, such as private networks and the Internet. The system consists of two major components:

- 1) a base station component connecting to a service provider's backbone network which may ultimately provides access to the Internet, and
- 2) a subscriber unit (CPE) installed and operated at each end users computer.

The base station may be deployed in a cellularized and sectorized fashion and is designed to provide high speed throughput for dense user capacities. It is targeted to be best utilized and deployed in high density suburban or urban areas. The base station coverage area (sector) is approximately a 1 to 3 mile radius from the transmitting tower, 5 miles maximum. These sectors may overlap when an additional base stations are deployed thus allowing a given user in an area to potentially communicate to one of multiple base stations depending upon the signal quality. Adding a base station to a cell increases the user density and maintains the quality of service intended for a particular subscriber.

The subscriber unit or customer premises equipment (CPE) is a transceiver, modem and directional antenna integrated into a single enclosure. The CPE is a low cost, customer-installable device. This is intended to be mass marketed and sold as a consumer device, much in the same way as dial-up modems or other commercial off the shelf components are sold.

The NextNet air link functions as an Ethernet bridge. NextNet can support various network layer methods e.g. IP. Initial NextNet CPE end modems can be movable to allow the user to select a base station of the best quality signal. Time division duplex and cellular deployment support considerable flexibility in adjusting downlink vs. uplink airtime to actual two-way traffic flow. The system deploys in 6 MHz increments of spectrum.

1.2 Objectives

The primary objective of this document is to provide the FCC the proper information to issue an experimental license to Nextnet Wireless, Inc. in the MMDS/ITFS frequency band for facilities located in Waseca, Minnesota.

1.3 Revision History

Revision	Date	Author	Description
1.0	6/30/00	Keith Barnes	Initial draft revision.

2 SYSTEM COMPONENTS

2.1 Background

The Federal Register as of November 25, 1998 pp. 65087-65128 contains amended versions of FCC 47 CFR Ch. 1 Parts 1, 21, and 74 pertaining to the ITFS and MMDS frequency bands, 2500-2686 MHz. Pertinent paragraphs include: 74.936 Emissions and bandwidth; 74.937 Antennas; 74.938 Transmitting equipment (includes emission mask); and 74.939 response stations (Sections regarding transmitter output power, EIRP, directional antennas, and interference analysis, is most pertinent.). FCC/IEEE rules on personal exposure to RF from a non-portable or non-handheld unit apply to NextNet CPE unit equipment.

The RF system uses the spectrum in the 2500-2686 MHz ITFS/MMDS band. The FCC licenses these frequencies as 31 different channels, each with 6 MHz bandwidth.

2.2 Modulation

The modulation is orthogonal frequency division multiplexing (OFDM). The OFDM shall consist of 1024 sub-carriers with only 811 sub-carriers transmitted. Each sub-carrier is quadrature phase shift keyed (QPSK) on each of the information sub-carriers in each OFDM modulation symbol. The QPSK provides for 2 bits, i.e. dibit, of information for each sub-carrier.

The modulation bandwidth is 5.544503 MHz. The modulation and emissions meet Part 74.936.

2.3 Time Division Duplex

The system uses time division duplex (TDD) operation. The base station transmits for a period and then the CPE equipment transmits for a period, if allowed. Both the base station equipment and the CPE equipment use the same frequency for transmit and receive. The protocol between the base station and CPE equipment controls when the CPE equipment can transmit. The CPE equipment cannot transmit unless it can hear a base station and is locked to the base station via control through the protocol, information from the base station is received and decoded. The base station has a minimum duty cycle of 42.8% with a maximum of 91%. The CPE equipment has a maximum duty cycle of 7.143% with a minimum of 1.14% transmit on time.

2.4 Transmit Power

The power transmitted by the base station or subscriber equipment is 2.0 watts average for each symbol transmitted. The CPE uses a time-division multiple access (TDMA) scheme allowing a "source-based" time averaging of the power that is transmitted. The CPE equipment is restricted by the protocol to transmit less than 7.143% of the time, giving a time averaged power of 0.143 watts average. The emissions meet Part 74.936.

The transmit power of the CPE is controlled to meet a minimum signal level at the base station. This further reduces the maximum amount of power that the CPE transmits. This reduces the potential of interference to a co-channel frequency user.

The CPE equipment is below the recommended maximum limit of 1 milliwatt per square centimeter at 20 centimeters for time averaged power RF exposure. This includes the 13 dBi gain of the subscriber unit internal antenna.

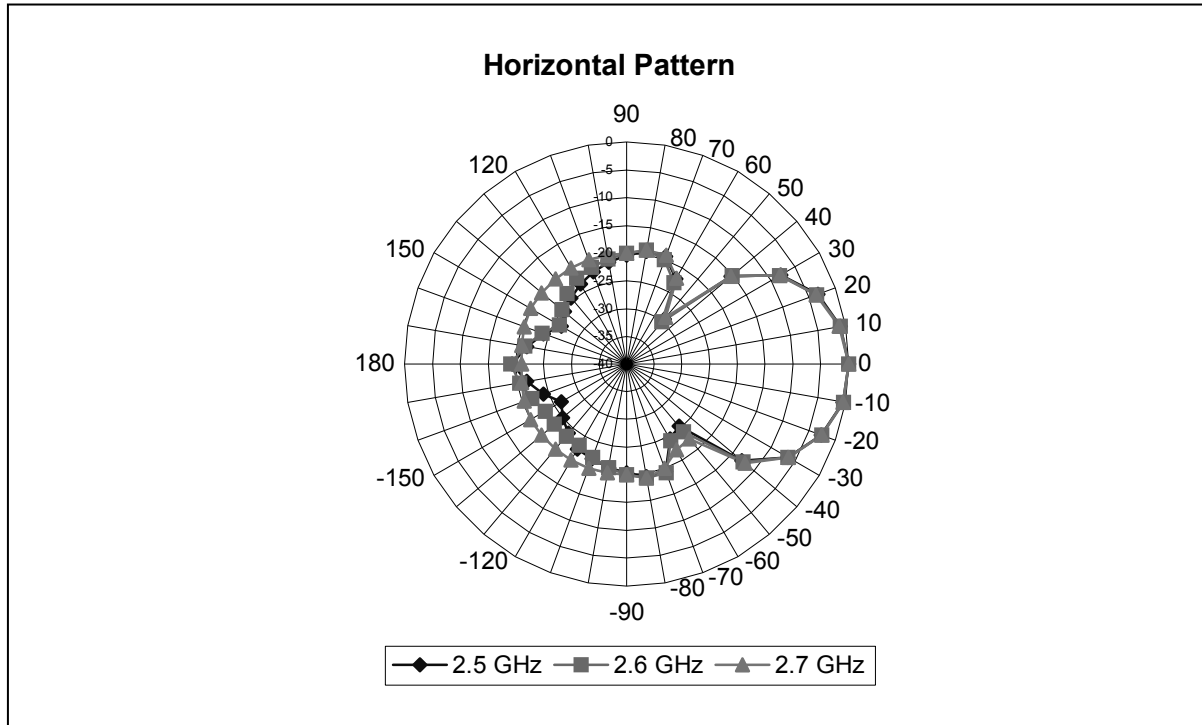
2.5 Base Station Site Antennas

The base station site is typically equipped with six (6) base stations each with their own independent antenna. The antenna is typically a panel antenna with a 60° horizontal beam width with 19 dBi of gain. This provides an overall omni-directional base station site coverage. The antenna is vertically polarized. Other sectorization patterns of 90°, 120°, and omni-directional antenna patterns may also be used with different gains. There is approximately 2 dB of line loss providing an EIRP of 100 watts average.

2.6 Subscriber Unit Antenna

The subscriber units contain their own internal gain antenna. The subscriber unit antenna has 13 dBi of gain with a 30° to 40° horizontal beam width. The antenna is vertically polarized.

The following is a diagram of the horizontal pattern of the internal antenna of the subscriber unit. The 0 dB is referenced to a gain of 13 dBi.



3 PROPOSAL

Nextnet is proposing to perform an initial system field test in Waseca, Minnesota. This shall consist of three (3) base stations and approximately five (5) to ten (10) subscriber units.

3.1 Frequencies

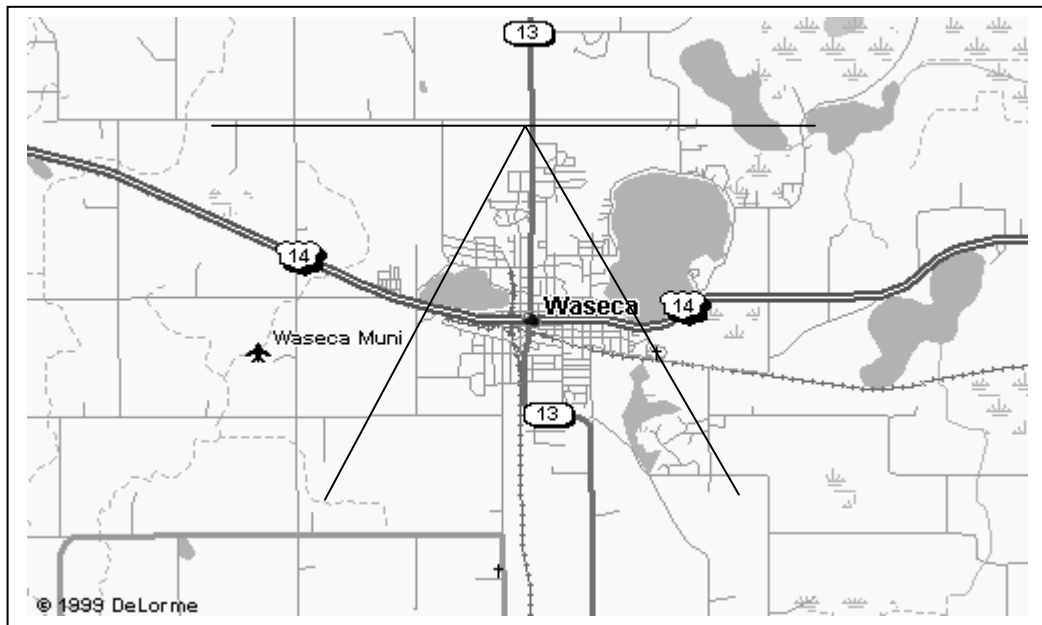
Nextnet has obtained an agreement with the Waseca Public School District to temporarily use their frequencies, see attached letter. The Waseca Public Schools license is WLX449 for all four (4) channels of the D block. Nextnet will use these frequencies. Nextnet will set each base station to one of the different frequencies for operation.

3.2 Base Site

The base stations will be located at the north water tower in Waseca, N 44° 6' 4.3", W 093° 30' 32.8" at 353.3 meters (1159 feet) AMSL. Three (3) panel antennas will be used. The base antennas will be Antennas America, Inc. MMDS Relay Antenna with 19 dBi gain, see attached sheet for engineering data. The center of the antennas will be 28.96 meters (95 feet) above ground. The base antennas will be pointed in the following three directions: 120° to the SE, 180° S, and 240° SW.

The base stations will be mounted at the base of the water tower. They will be connected to the panel antennas via 1-1/4" foam coax and 1/2" coax jumper cables. The line loss is about 2 dB. The EIRP of the base station is 100 watts average for each modulated symbol when the coax and connector losses are taken into account.

The following diagram is a rough map of Waseca and the area covered by the three base antennas.



The locations of the units, both base and subscriber, are not in any "quiet zone" area where radio use is restricted. There will be no environmental effect if the license is granted.

3.3 Subscriber Unit Sites

The subscriber units will be fixed but may be moved to any one of the following locations:

Location Number	Latitude (N)	Longitude (W)
1 Office	44° 5' 20.6"	093° 30' 31.4"
2 Roger	44° 5' 31.6"	093° 30' 37.2"
3 Keith	44° 5' 04.7"	093° 31' 11.8"
4 Merv	44° 4' 56.4"	093° 29' 42.0"
5 Doug	44° 5' 30.0"	093° 30' 09.2"
6 John	44° 1' 37.4"	093° 28' 39.3"
7 Itron	44° 6' 00.9"	093° 30' 28.1"
8 EFJ	44° 4' 10.9"	093° 30' 35.9"
9 Rory	44° 5' 50.3"	093° 30' 16.0"
10 CTI	44° 5' 07.3"	093° 30' 45.5"

The subscriber unit has an internal 13 dBi gain directional antenna with a 30° to 40° horizontal beam width. For this experimental license the subscriber unit antenna should be viewed as an omni-directional antenna with 13 dBi gain. This is due to the fact that the subscriber unit (with internal antenna) may be positioned in any direction. This will be done for testing to investigate the base station selection process.

The EIRP of the subscriber unit is 40 watts average power for each modulated symbol when the internal antenna gain is taken into account. The subscriber unit uses a time-division multiple access (TDMA) scheme allowing a "source-based" time averaged signal that is 2.9 watts maximum.

The subscriber units will be located inside of buildings. This will introduce a certain amount of additional propagation loss.

The height of the subscriber unit will range from 1 meter (3 feet) to 5 meters (16) feet above ground. This would be placement on the first floor to a third floor of a building.

4 INTERFERENCE PROTECTION

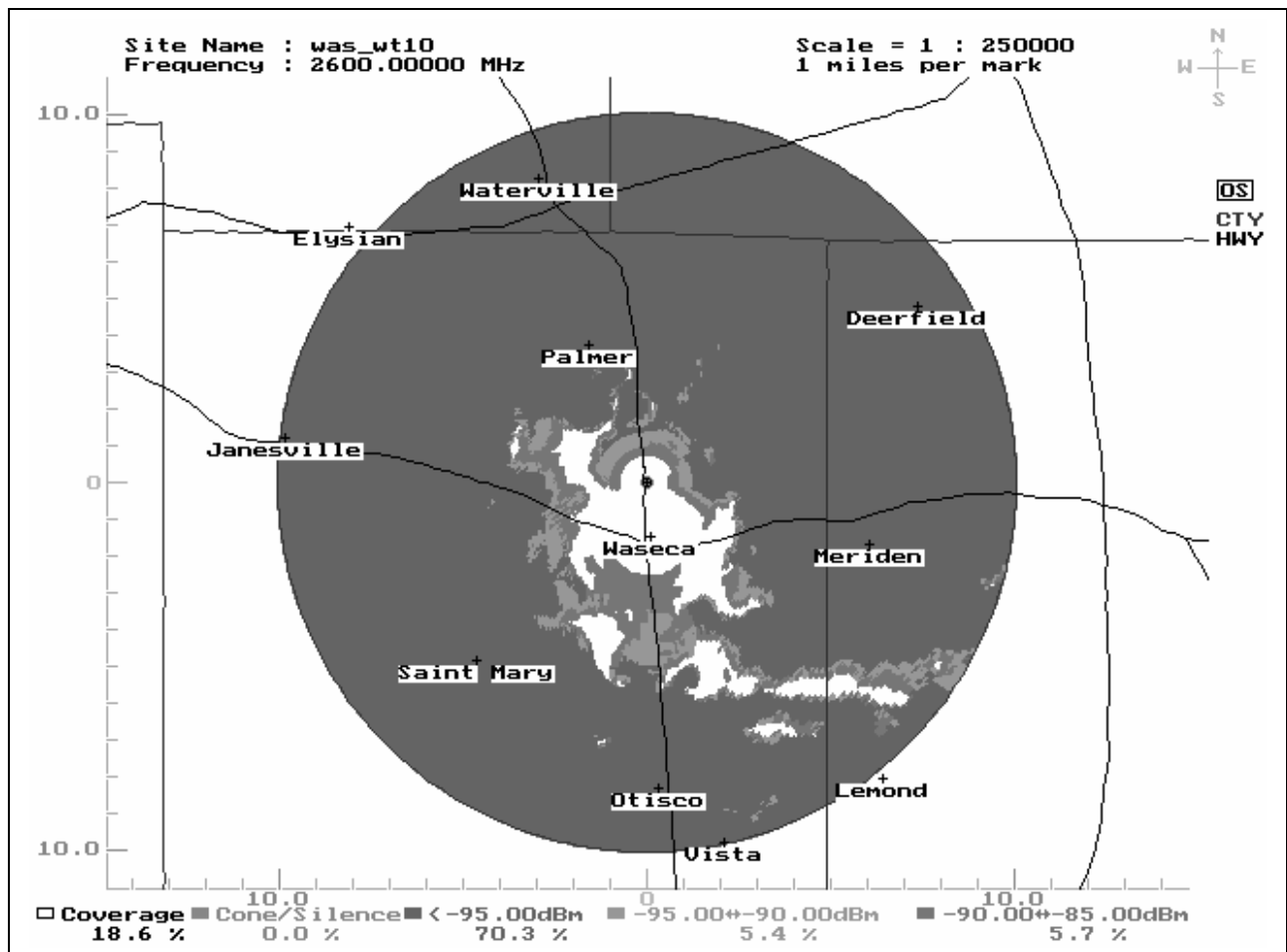
A database search was conducted for any stations within 70 miles of N 44° 04' 54.1" W 93° 30' 18.0" with secondary facilities included. The following co-channel stations in the D block frequencies were discovered:

WLX511	Byron, MN	45 miles	N 44° 01' 59.0" W 92° 36' 10.0"
WND328	Fairmont, MN	62 miles	N 43° 33' 20.0" W 94° 29' 11.0"
WLX200	Minneapolis, MN	62.8 miles	N 44° 58' 32.0" W 93° 16' 18.0"

The signal level of the base station at 10 miles is $-71.2 \text{ dBW/meter}^2$ power flux density and $-82.1 \text{ dBW/meter}^2$ at 35 miles for the frequency band of interest. This is near or below the power flux density of -73 dBW/meter^2 that is allowed at the boundary of a protected service area. The closest inference would be to WLX511 at Byron, MN. They were contacted and they have not constructed or are operational, therefore, they do not represent an interference issue. Nextnet will be using the D block frequencies assigned to the Waseca Public School license WLX449; which has already met any interference criteria for licensing.

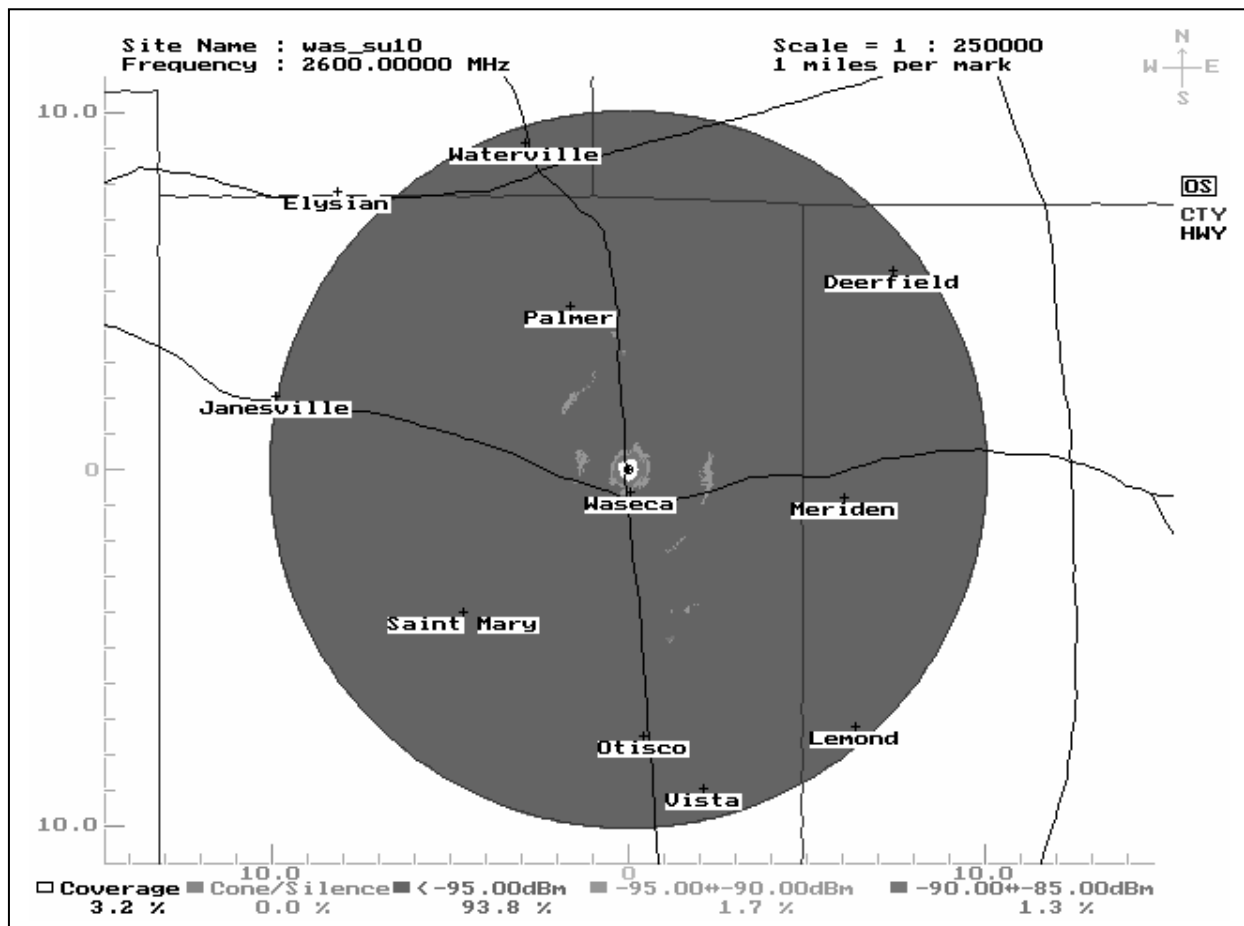
The signal level of the base station at 95 feet above ground at 10 miles with a receive antenna at 6.6 feet with 13 dBi of gain is -119.9 dBm using the Okumura-Hata model for suburban area. The Okumura-Hata loss model is the standard being used for PCS deployment calculations. This is a power flux density of about $-119.6 \text{ dBW/meter}^2$, again well below the allowed limit.

The following is a figure showing the signal level from the base station that is pointing at 180° south.



The above analysis used an Okumura-Hata suburban model for the calculations. The received antenna was at 6 feet with a 13 dBi gain. The signal level at 10 miles is well below the allowed interference to other stations.

The following is a figure of the subscriber unit transmission located at the location number 1.



This analysis is with a 13 dBi omni-directional gain antenna. This is due to the fact that the subscriber unit may be rotated in a full 360° circle to obtain a base station. The receive antenna for this analysis is at 6 feet with no gain. The area of coverage is very small. If the receive antenna is higher then the coverage pattern would be larger.