



To: Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Subject: Experimental License // STA Application, Public Exhibit I

Date: 7 March 2004

Gentlemen,

An experimental license is being sought for the development of a consumer data communications system. It will be necessary to perform field range and performance testing on equipment yet to be certified from time to time to verify performance in actual operating conditions. The necessity for an STA is not expected to be longer than 6 months.. This document addresses some of the Commissions concerns regarding Experimental licenses / STAs.

If additional information / clarification is required, please do not hesitate to contact me.

Regards,

A handwritten signature in dark ink, appearing to read 'David Waitt', is positioned above the printed name and contact information.

David Waitt
Consultant Representing MetroFi
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1. Complete program of research and experimentation proposal including description of equipment and theory of operation:

The main objective of the proposal is to demonstrate the feasibility of the MetroFi wireless network system. The network will rely on standards based IEEE 802.11 A/B (Wi-Fi) technology.

The proposed experiment will be utilizing pre-certified, standards based IEEE 802.11 A, 5GHz and 802.11 B, 2.4 GHz radios.

2. Specific Objectives sought to be accomplished:

The main objective of the proposal is to demonstrate the feasibility of the MetroFi wireless 2.4GHz / 5 GHz network for delivering a broadband data network to customers using standards based technology.

3. How the program of experimentation has a reasonable promise of contribution to the development, extension, expansion, or utilization of the radio art, or is along the line not already investigated:

MetroFi proposes to deliver high quality; low cost, wireless connectivity using standards based 802.11 (Wi-Fi) technology. The state-of-the-art equipment for the proposed experiment is pre-certified. The company firmly believes that a 3rd access solution based on wireless access to compete with DSL and cable modem service will be of great benefit to consumers. We believe that MetroFi will deliver wireless access to customers with a high quality, low cost service that is currently not available of through conventional wireline (i.e., cable modem or DSL), or other wireless means.

Location Of Test Radios

The proposed system would be used at various locations through-out the Silicon Valley, California area. The units will all be in “Temporary Fixed “ location within an 80kM radius of Mountain View California. This system would not be an aeronautical hazard, as it would be used on existing pole tops or on the top of existing buildings, with installations less than 6 meters above the roof top.

Proposed Certification Procedure

Multiple potential vendors of the radios that will make up the network infrastructure will be evaluated during this experiment. Each vendor will perform FCC certification pre-testing prior to delivering units to MetroFi for evaluation and experimentation. Once it is apparent that the units operate in the network as required and no additional significant modification to the units are required, MetroFi will notify the vendors to move forward with the official FCC Certification process. The proposed transmitters will be located within an 80 km radius of Mountain View, on existing pole tops and existing building tops below 6 meters, hence the antennas will not be an aeronautical hazard.

Technical Summary 2.4 GHz (IEEE802.11 B)

Modulation: DSSS
Occupied Bandwidth: 22 MHz
Necessary Bandwidth: 22 MHz
Emission Designator: 22MG7D
Frequency Tolerance: 25 ppm
Channelization: 22 MHz , Channels 1 -11
Center Frequency Ch 1 = 2.412 GHz
Ch 11 = 2.462 GHz

Pre-Certified 2.4 GHz (DSS) Equipment:

Vendor	(#1)	(#2)	(#3)
Transmit power (max)	23 dBm	23 dBm	20 dBm
Maximum antenna gain	9 dBi, omni	9 dBi, omni	5 dBi, omni
EIRP / ERP	1585 mW / 966 mW	1585 mW / 966 mW	316mW / 192.75 mW

Technical Summary 5.8 GHz (IEEE 802.11 A)

Modulation: OFDM
Occupied Bandwidth: 22 MHz
Necessary Bandwidth: 18 MHz
Emission Designator: 18MW7D
Frequency Tolerance: 25 ppm
Channelization: 20MHz, 4 Channels
Center Frequencies Ch 149 = 5.745 GHz
Ch 153 = 5.765 GHz
Ch 157 = 5.785 GHz
Ch 161 = 5.805 GHz

Pre-Certified 5.8 GHz (UNII) Equipment:

Vendor	(#1)	(#2)	(#3)
Transmit power	27 dBm	27 dBm	18 dBm
Antenna info	12dBi 70° sector/20° vertical Right hand circular polarized	13.1 dBi 90° sector/14° vertical	12 dBi 60° sector/18° vertical dual slant polarized
EIRP / ERP	7.9 W / 4.815 W	10.2 W / 6.217 W	1 W / .609 W
Antenna info	16 dBi Panel 60° horizontal/20° vertical RHCP	12.5 dBi 120° sector/14° vertical	
EIRP / ERP	19.9 W / 12.129 W	8.9 W / 5.424 W	
Antenna info		15 dBi 90° sector 8° vertical	
EIRP / ERP		15.8 / 9.66 W	