



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

Subject: Experimental License / STA / Public Exhibit III

Date: 10 September 2004

Gentlemen,

An experimental license is being sought for the development of a consumer data communications system. In addition to the antennas already proposed in Public Exhibit I, there exists the possibility of using the antenna outlined below for at least some of the experimental testing and possibly at some locations within the network.

Additionally, when the devices are certified, they will likely be certified under FCC Rule Part 15.247 rather than 15.407. Part 15.407 was referred to in a previous exhibit. Certifying under Part 15.247 will allow the use of one additional channel located between 5.825GHz and 5.85GHz. All of the radio parameters stated previously continue to meet the 15.247 requirements. This is due to the fact that 15.247 is, in some aspects, less stringent than the Part 15.407 requirements in the band of concern.

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

Regards,

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Consultant Representing MetroFi
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Technical Summary 5.8 GHz (IEEE 802.11 A)

Additional Antenna Information

FCC Rule Part	15.247
Modulation:	OFDM
Occupied Bandwidth:	22 MHz
Necessary Bandwidth:	18 MHz
Emission Designator:	18MW7D
Frequency Tolerance:	25 ppm
Channelization:	20MHz, 5 Channels
Center Frequencies	Ch 149 = 5.745 GHz
	Ch 153 = 5.765 GHz
	Ch 157 = 5.785 GHz
	Ch 161 = 5.805 GHz
	Ch 165 = 5.825 GHz

Pre-Certified 5.8 GHz (UNII) Equipment:

Vendor	(#1)
Transmit power	27 dBm
Antenna info	9dBi Omin Horz: Omni , Vert 8° Vertical polarized
EIRP / ERP	1.0W / 2.426 W

Outline Of MetroFi Compliance With FCC Regulations: Transmit Power, EIRP and Antenna Gain

5.8 GHz 15.247 ISM Requirements

15.247(b)(3)
For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt.

15.247(b)(4)
Except as shown in paragraphs (b)(3) (i), (ii) and (iii) of this section, if transmitting antennas of directional gain greater than 6 dBi are used the peak output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1) or (b)(2) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

How MetroFi Complies:

	FCC Regulations	MetroFi Operation
Operating Frequency Band	5.725 - 5.850 GHz	5.745 - 5.820 GHz
Transmit power (MAX)	1.0 Watt (30 dBm)	.5 Watt (27 dBm)
Antenna Gain (MAX, point to Multipoint point w/ no power reduction)	6 dBi	9dBi
Maximum Allowed EIRP	36 dBm EIRP	36 dBm EIRP

For purposes of some parts of this experiment, a 5.8 GHz omni antenna may be employed. The antenna is a Maxrad MFB58009 with 9dBi of gain.

15.247(b)(3) above states a maximum transmit power level of 1 watt (30 dBm). The rules continues to Part 15.247(b)(4) which states that is the antenna gain is above 6 dBi, the transmit power stated in paragraph (b)(1) or (b)(2) must be reduced 1 dB for every dB the antenna gain exceeds 6 dBi.

Obviously the 9dBi Maxrad antenna exceeds this level by 3 dB - therefore the maximum allowed power is the level stated in paragraph (b)(3) minus 3dB. This results in a maximum allowed transmit power of 27 dBm. This is the maximum transmit power that will be used with this antenna during the experiment.