Before the
**FEDERAL COMMUNICATIONS COMMISSION**
Washington, D.C. 20554

| | | |
|---|---|---|
| In the Matter of | ) | |
| | ) | |
| Modifications of Part 2 and 15 of the | ) | ET Docket No. 03-201 |
| Commission's Rules for Unlicensed Devices | ) | |
| and Equipment Approval | ) | |

## GENERAL COMMENTS

The PART-15 Organization (PART-15.ORG), by its membership and pursuant to the Commission's *Notice of Proposed Rule Making* released November 18, 2003, hereby submits its comments in response.

As the Commission is aware, the PART-15.ORG is a worldwide organization of License Exempt Wireless Internet Service Providers ("WISPs") and equipment vendors who provide technical support and training in the provisioning of broadband service via license-exempt spectrum in the 902-928 MHz, 2.4 GHz and 5 GHz bands. The PART-15.ORG voices our regulatory concerns via the License Exempt Alliance (LEA) of the Wireless Communications Association International (WCAI) who are active in a number of Commission proceedings that directly or indirectly pertain to the license-exempt industry. The PART-15.ORG fully indorses and supports the LEA filing on this matter and submits on our own behalf the following.

PART-15.ORG praises the Commission's proposals to amend Parts 2 and 15 of its Rules to facilitate wide-area wireless broadband service over license-exempt spectrum. Commission rule changes should foster the perpetuation of growth in the use of the license-exempt spectrums that provide BWA. What may have been founded on accident, has now become what we feel is the nations best asset for providing BWA in not just metropolitan areas but urban and rural areas

as well. We are confident that the commission is aware that most of the urban and rural areas in America are still without broadband access. However, as the commission is also aware, it appears that the smaller WISPs are (by far) leading the way in providing such services utilizing the license-exempt frequencies.

As our organization is comprised largely of members using the license-exempt spectrums to provide Wireless Broadband Internet Access, we will address the proposed rule making from a "WISP" standpoint by limiting our response to only those issues associated with the field experiences of the license-exempt bands and more specifically to the WISPs use of the Licensed Exempt spectrum.

While PART-15.ORG members are very sensitive to the concerns of the licensed community about the issues raised in the *NPRM*, we are not convinced that many of these proposed issues are or will change the "status quo" as it relates to interference being caused by Part 15 devices to licensed operators. PART-15.ORG is not aware of any such out-of-band interference cases to date and can not comment that any of the proposed changes would increase the risk of harmful interference.

However, we are compelled to suggest to the Commission that "Anyone can be a WISP" in the License Exempt spectrum. From Best-Buy to Alvarion, anyone can become a WISP as all it takes is money and very little money at that. Presently, there is no requirement for any "technical knowledge" in becoming a WISP. PART-15.ORG does not believe it to be in the public's best interest to simply allow "anyone" to modify certified systems. Because there are presently no requirements in becoming a WISP, it has led to massive growth in the industry, which PART-15.ORG supports fully. However, the technical level of many WISP operators fails to meet the simplest of interference needs, even to the point of self-interference.

Because "anyone" can become a WISP, most of the public entering the WISP industry may very well know and understand networking but have very little if any RF knowledge.

## DISCUSSION

***PART-15.ORG Supports the Commission's Proposal to Permit Advanced Antenna Technologies To Utilize The Higher Gain Permitted for Point-to-Point Operations in the License-Exempt 2.4 GHz Band with Additional Requirements as Outlined Below.***

PART-15.ORG supports the Commission's proposals to permit advanced antenna designs such as sectorized antennas and phased antennas to take advantage of the higher antenna gain permitted for point-to-point operations in the license-exempt 2400-2483.5 MHz band tempered with a balance of tighter beam antennas and the two-beam minimum as outlined in more detail below.

Furthermore, PART-15.ORG believes that under current rules, there is little distinction between Customer Premise Equipment (CPE) antenna's and those used for Access Points (APs). Therefore, we believe it is essential that the Commission provide a distinction between these two "uses" before applying any purposed changes. Real world applications/deployments of antennas used by the WISPs are separated by CPE use vs. AP use. e.g. A typical fixed wireless CPE deployment does not normally need a 60 degree beamwidth antenna to accomplish the intended link to the AP. On the other hand, a 60 degree beamwidth antenna is routinely used at the AP and with good reason (point-to-multipoint)

Based on the premises outlined above, PART-15.ORG purposes the possible off-set to allow more power provided the tighter beamwidth antenna would be subject to fewer unwanted emissions outside the transmitted beamwidths of other transmitters. It has always been the

concern of PART-15.ORG members that there is no conceivable reason to have more than a 15 degree horizontal or vertical beamwidth antenna located at a fixed wireless customer location.

Therefore, PART-15.ORG supports the tightening of the beamwidth and more flexibility in the adjustment of power output on the Customer Premise Equipment (CPE) while at the access point, sectorized and phased array antennas to take advantage of the higher gain permitted for point-to-multipoint systems, subject to the two-beam minimum, will make better use of the spectrum by promoting antenna configurations that transmit signals more precisely towards the intended terminals (CPE or AP) and thereby cause less interference to other systems transmitting outside the beamwidth of the intended receiver.

***PART-15.ORG Supports More Flexible Antenna Requirements for License-Exempt Devices***

PART-15.ORG supports the Commission's purposed rule making that license-exempt broadband providers would benefit from more flexible Commission rules that permit them more freedom to "mix and match" antennas with certified systems as necessary.

PART-15.ORG believes that it is also important to retain the current Commission rules pertaining to unique connector and professional installation requirements as an over relaxation may compromise the RF environment as outlined above.

Therefore, PART-15.ORG agrees that the Commission's equipment certification process should require testing of a system only with the highest gain antenna of each type that would be used with the system's transmitter when operating at maximum permitted output power based on the intended use of the transmitter (CPE or AP).

***PART-15.ORG Believes The Commission Should Not Permit Separate Marketing of Amplifiers***

PART-15.ORG does not support the Commission's proposal to permit separate marketing of amplifiers with certified systems, regardless if the individual amplifier has been certified as "stand alone" compliant with the Commission's Part 15 power limits.

PART-15.ORG supports the reasoning outlined in the LEA, Alvarion and Young Design System (YDI) response to this *NPRM*. PART-15.ORG feels strongly that any separate marketing of amplifiers, whether certified individually or as a system would lead to very poorly designed deployment of systems and not in keeping within the highest industry standard for use of the license-exempt spectrum. Additionally, these types of poorly designed deployments do nothing for the license-exempt "good neighbor" interference policy the WISP industry tries to foster.

PART-15.ORG does support what we feel is a more rational and creative approach. We recommend that the use an amplifier which is not certified as part of its system (under present rules) but has been certified as a stand alone item (purposed rule change), the "professional installer" should have the option of seeking vendor approved compliance. This vendor approved compliance would not be in the form of additional TCB authority, nor recertification of the system as required under the present rules of conformance.

PART-15.ORG suggests that a self-certification process under a possible Class I Permissive Change be instituted by one of two means – (1) the license exempt vendors where the results of such "self-certification" would be on file at the FCC or (2) by a "clearly defined" and certified professional installer. Putting the burden of compliance on either the manufacturer or a clearly defined and certified professional installer will eliminate the untrained "guessing" or misinterpretation of "technically equivalent" decisions out of the hands of the general public and inexperienced WISPs.

As a minimum, if the Commission does adopt a rule change in this area, the change should reflect a general statement such as "an external amplifier may be marketed for individual sale provided it is deployed with a certified system based on manufacturers recommendation".

***PART-15.ORG Does Not Support Any Commission Changes to Professional Installation Rules.***

*Section 15.203 of the Commission's Rules, users of equipment operating on license-exempt spectrum must utilize either a permanently attached antenna or a unique antenna connector with a transmitter authorized under Part 15. Compliance with this requirement is not necessary if the equipment at issue must be professionally installed.*

PART-15.ORG feels that this rule has produced no significant impact in the industry as it relates to unique connectors because these are easily obtained from sources other than the manufacturer. A simple online internet search of "antenna connectors" will provide the Commission a view of the abundance of connectors that if used could violate this rule.

However, it is the position of PART-15.ORG that the responsibility of the people using these connectors should be held in accountable for compliance. It is, as always, highly debatable that making the unique connectors less available to the public is an effective measure to eliminate the possibility of their use by the untrained. It should not be the FCC or manufacturers' responsibility to ensure compliance in this area any more than the automotive manufacturer is responsible for a driver's compliance with speed laws.

PART-15.ORG members (WISPs) use the unlicensed spectrum on a daily basis. We are the ones who experience the interference and at times cause the interference and to our determent cause ourselves interference. A significant number of new WISPs have grown over the past two years. Because there is no regulatory requirement for identification of the smaller licensed

exempt WISPs – we "believe" there are approximately 8000 small WISPs nationwide. We further believe that by the end of this year, more than 2 Million customers will be served by the small WISPs use of the license-exempt spectrums in rural, urban and metropolitan areas across the United States.

Because of the ever growing population of license exempt WISPs, not only is there a need to bring to current rules up to date, but also the training and certification process of our industries professionals. Many well known training and certification programs are outdated or require previous experience not currently available to an industry that is only a couple years old (referring to the Licensed Exempt WISP). For example, some current requirements for certification require over (8) years of RF experience. This requirement is mostly impossible for the WISP as most License Exempt WISPs have less than four years experience and many have less than two years experience.

We do believe in a training and certification program, but not one that is based on "experience" alone. Akin to the basic HAM operator license, a simple written test could be administered by industry organizations to determine the level of expertise needed to eliminate the possibility of exceeding FCC rules or causing interference to the licensed operators. Although training should be accomplished with the cooperation of the manufacturers, the certification process must remain within the "using" industry to ensure the actual deployment of the systems meet the criteria established by the Commission and the manufacturers.

Furthermore, we do not believe that the issue of defining a "professional installer" should be driven by a FCC ruling. PART-15.ORG believes that this issue of training and certification should remain an "industry" issue to which the "industry" can draw it's conclusions as to the requirements needed within the industry. The FCC should not put itself into a position of

defining which installer has the technical competence to meet industry needs; however, this would not prevent and PART-15.ORG supports and encourages the Commission to establish a list of authorized certification facilities not unlike the present list used for authorized certification laboratories. PART-15.ORG does not feel the FCC and manufacturers should be involved in OSHA standards for safety in climbing towers, nor any of the other many facets of WISP operations that do not directly relate to RF signaling or the equipment produced by the manufacturer.

PART-15.ORG agrees with the LEA filing that the Commission should incorporate the substance of its informal rulings on professional installation into Section 15.203 of its Rules so as to eliminate any marketplace confusion as to when equipment must be professionally installed. According to informal rulings available on the Office of Engineering and Technology's web page, those criteria include the following:

- The device cannot be sold at retail, to the general public or by mail order. It must be sold to dealers who professionally install it.
- The device must *require* professional installation – it cannot be optional (in other words, the equipment must be installed by licensed professionals, and the installation process must require special training, *i.e.*, special programming, access to keypad, field strength measurements).
- The equipment generally is not intended for use by the general public – rather, it is generally intended for industry/commercial use.

### ***PART-15.ORG – Additional Comments***

With regards to any additional changes contemplated by the FCC, PART-15.ORG suggests the Commission revisit the use of additional frequencies in the presently restricted bands of 2483.5 to 2500 MHz and even the use of 2310 to 2390 MHz as possible additional license exempt bands to be used by the WISPs.

### *PART-15.ORG Closing Comments*

The commission efforts are to be commended for the current growth of Broadband Wireless Access to urban areas as well as all communities, nationwide. We believe that more license-exempt spectrum (below 6GHZ) is needed to fulfill the BWA market. There is an abundance of technical reasons for seeking the additional frequencies. The most prevalent is to overcome the Line-of-Sight (LOS) requirements needed above 1GHZ. Additional 900MHZ, 2.4GHZ and 5GHZ license-exempt spectrums could be the determining factor of whether BWA is available to much of the nation and is especially important in urban and rural areas where mother nature is at her best with beautiful tree canopy's and rolling hills. The additional use of the 700MHZ band would also significantly increase the availability of BWA in rural, urban and metropolitan areas nationwide.

The permissible license-exempt operations could be expanded to include a separate and distinct reference for BWA purposes as opposed to "indoor" use.

PART-15.ORG believes that a separate and distinct difference should be in place for the dissimilar usages of the license-exempt frequencies. We believe that BWA equipment should not be in the same category and restricted to rules pertaining to "indoor" home-use devices.

To accomplish this, a viable solution cannot be forthcoming overnight or by the stroke of a pen. It will take every bit of the commissions efforts to seek industry agreement and cooperation to conclude a "best" scenario for the use of license-exempt "outdoor" use regulations.

We are concerned with the efficient use of the license-exempt spectrum and would suggest the commission concentrate their efforts in this area. For example -- The current

commission rules pertaining to the use of amplifiers is well received by most operators. Rules such as these could and should be enhanced to facilitate the efficient use of the spectrum to a greater capacity, thereby allowing more usage of the license-exempt spectrum. PART-15.ORG's suggestions made above in the response may assist the Commission in this endeavor.

PART-15.ORG feels very strongly in protecting the experimental, innovation and development of new spectrum-based technologies and services. However, as mentioned earlier in this response, we believe that a separation needs to exist to facilitate the "new" widespread outdoor usages of the license-exempt spectrums as they relate to BWA. Since the use of "indoor" license-exempt wireless LAN equipment is relatively new in the area of providing outdoor WWAN (Wireless Wide Area Networking) present commission rules and policies should reflect this "new" advancement in technology and usage.

Many of the worlds leading wireless manufactures (Alvarion, YDI, smartBridges, Redline Communications and many others for example) are providing equipment designed specifically for license-exempt "outdoor" BWA deployments and presently still come under the "indoor" commission rules. Along the same lines, we the WISPs must endure those same "indoor" rules when deploying a large-scale "outdoor" system.

We would like to propose (given the appropriate time) and through our LEA counsel, a separate set of guidelines similar to those of Part 15 of the Telecommunications Act but showing a separate and distinct set of rules and policies for the use of license-exempt "outdoor" spectrum use.

We encourage the Commission to review this organizations "Professional Installer Certification" program along with many of the other "industry standards set by this organization. Our training and certification program (along with our other training programs and

certifications), provide an excellent example of the WISPs industry taking the lead to ensure deployments are the least intrusive (interference wise) as possible in the license-exempt frequencies. Most of what PART-15.ORG tries to accomplish is to provide the technical assistance and training needed to provide WISPs free use of Part 15 devices that are driven by and in accordance with sound engineering practices and efficient spectrum usage.

PART-15.ORG is currently reviewing the prospect of regional cooperation agreements among the license exempt WISP community in a self-policing effort. In addition, PART-15.ORG is preparing to provide the nations largest online database of independent WISPs and their respective coverage areas. The database will serve two main purposes, (1) Provide identification of all areas covered by BWA nationwide, based on zip codes. (2) Provide the public a resource to enable them to easily find BWA service in their area.

PART-15.ORG stands ready to work with the commission and other private organizations such as the LEA in securing a more meaningful use and protection of the license-exempt spectrums.

Respectfully submitted,

PART-15 ORGANIZATION

By: _____
Michael R. Anderson, Chairman

PART-15.ORG
P.O. Box 157
North Aurora, Illinois 60542
630-859-1987

January 23, 2004