

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

In the Matter of)	
)	
OCTATRON, INC. AND CHANG INDUSTRY, INC.)	ET Docket 05-356
)	
Request for Waiver of Sections 15.245(b), 15.247(e) and 15.249(a) of the Commission's Rules for a Video and Audio Surveillance System)	

To: The Chief, Office of Engineering and Technology
Via the OFFICE OF THE SECRETARY

COMMENTS OF ARRL, THE NATIONAL ASSOCIATION
FOR AMATEUR RADIO

ARRL, the National Association for Amateur Radio (ARRL), by counsel and pursuant to the Public Notice, DA 05-3339, released December 29, 2005, hereby respectfully submits its comments in response to the *Request for Waiver* filed by Octatron, Inc. and Chang Industry, Inc. (Petitioners) on or about November 28, 2005. Petitioners claim to have developed analog surveillance systems permitting video and audio surveillance in enclosed areas, called the "Dragon Egg" and "Pole Camera" systems. The first provides video over a 360-degree field through an egg-shaped imaging sensor. The second uses an extendable pole with a camera mount for insertion into enclosed areas for surveillance.

1. Each device uses analog emissions and is proposed to operate at 1 watt (apparently output power). They operate at 902-928 MHz, unlicensed. The ostensible purpose of the devices is for law enforcement surveillance, but the waiver requests do not so limit their proposed application. The claimed need for waiver of three rules governing unlicensed devices in the 902-928 MHz band is due to the choice of the manufacturers to use analog, rather than digital, emissions in that band. Petitioners claim that there is a need for 1 watt of power in order to insure reliable transmission of the video and audio from the devices, which is not permitted for analog devices in that band. Section 15.247(b)(3) sets forth the one-watt power level for digital and spread-spectrum devices. That power level does not apply to analog emissions.

2. Neither can either device meet the power spectral density requirement of Section 15.247(e), applicable to digital intentional radiators which engage in continuous transmissions. Finally, the devices cannot meet the specifications for high-power, point-to-point operation in certain bands using highly directional antennas set forth in Section 15.249 of the Commission's Rules. The Petitioners at page 3 state, with respect to interference potential to licensed radio services in this band, no more than the following:

Although the Surveillance Systems will exceed the applicable Part 15 limits for analog devices, it will not create significant interference.

It is unclear from this one sentence what compatibility tests, if any, were conducted by the Petitioners relative to licensed radio services in this band, and what, quantitatively, is meant by “significant interference.” Since the Amateur Service is allocated the 902-928 MHz band, the Petitioners’ definition of “significant interference” is highly relevant, as is the basis for their conclusion. Since the Petitioners have apparently failed to determine, much less explain, the interference potential of their devices, it cannot be determined whether or not the underlying purposes of the rules limiting power and power spectral density for analog and digital devices in the 902-928 MHz band would be frustrated by grant of the proposed waiver in this case.¹ A waiver cannot be granted without such a finding (47 C.F.R. § 1.925). The petitioners then admit, without elaboration, that any interference would be in the geographic area of “emergency, temporary operations or to defined training areas.” Thus, in addition to how much interference should be expected, the reader is left wondering what those areas comprise. If there are admitted interference areas, the proposed device should be operated in a public safety allocation, such as 2450-2483.5 MHz, and on a licensed basis.²

3. For its waiver request, Petitioners have parroted almost word for word the waiver justification included in a similar petition filed by Remington Arms Company for similar devices in the 2400-2483.5 MHz band

¹ See 47 C.F.R. § 1.925.

² The 2450-2483.5 MHz band is available for precisely this type of operation. See 47 C.F.R. § 90.20(a).

earlier in 2005.³ Indeed, the instant waiver Petition was filed only ten days after the release of the Commission's order granting the Remington Arms waiver in November of 2005. The Remington Arms surveillance device waiver petition was granted in part based on a Commission finding that the grant of the waiver would not frustrate the purpose of the underlying rule, and that the Remington waiver was in the public interest. That waiver limited sale and deployment of the device to law enforcement agencies. The instant Petition does not reference such a limitation. It therefore would permit deployment by anyone, in any context whatsoever. It also did not specify operation in the 902-928 MHz band. That band does not include any public safety allocation whatsoever.

4. The purpose of the power limit and power spectral density limit for operation in the 902-928 MHz band, and of the Section 15.249 limit, was initially to permit higher power Part 15 Spread Spectrum devices in the band. The rules were enacted specifically because "Spread Spectrum modulation reduces the power density of the transmitted signal at any frequency, thereby reducing the possibility of causing interference to other signals occupying the same spectrum."⁴ Later, in Docket 99-231, the rules were amended to permit any wide bandwidth digital devices in the band, on the theory that there was no greater interference potential to licensed radio services from such devices than from spread-spectrum devices, *provided*,

³ See, ET Docket 05-183, Order released November 18, 2005, FCC 05-194.

⁴ See, the *Second Report and Order*, ET Docket 99-231, FCC 02-151, released May 30, 2002, at ¶ 2.

however, that the digital devices meet the power spectral density limitation.

That is the *only* reason that the Commission concluded in 2002 that wideband digital emissions could be permitted at 902-928 MHz and other bands at the power levels designed specifically for Spread Spectrum emissions, without substantial interference potential. No such finding was ever made with respect to analog devices. There is no record on which Petitioners, or the Commission, could premise a finding that there will not be substantial interference potential from analog devices operated at the digital power level as proposed herein at 902-928 MHz. There is no reason why this waiver should be granted, certainly not on a permanent basis. Rather, the petitioners should be required to initiate a rulemaking proceeding, and to establish what the interference potential of 1 watt analog devices is at 902-928 MHz relative to wideband digital devices that do meet the power spectral density limitation of Section 15.247 of the Commission's Rules (i.e. 8 dBm per 3 kHz). The precise purpose of the rules sought to be waived here was to preclude interference before it arises. The purpose of this rule would be directly frustrated by permitting, without rulemaking, high-power analog devices that cannot meet the power spectral density limitation of Section 15.247(e).

5. The Petitioners assert, without establishing, that there is a market for these devices for public safety and anti-terrorism efforts. Merely by suggesting that these devices may be potentially useful in this context does

not establish that a permanent waiver for the devices will be in the public interest. Moreover, the argument is a non-sequitur. There is no showing anywhere in the four corners of the Petition that the device could not have been designed to meet the Commission's Rules. The alleged inadequacy of digital emissions versus analog emissions is limited to claimed additional battery capacity ⁵ and a claimed lack of robustness in digital video transmission. Those are not valid claims as a technical matter, as illustrated by the fact that very small, battery-operated COFDM transmitters are used to send broadcast quality video substantial distances, from racing cars at speed, in a harsh RF environment, for long periods of time. Digital emissions are not any less robust than analog emissions for the proposed application. The simple fact is that, as was admitted in the Remington Arms waiver petition, it costs the manufacturer less to make the analog devices. Therefore, the profit margin on each sale is higher. This is not a valid basis for a waiver grant.

6. The manufacturer here has made a choice as to how to engineer its product. It now seeks to avoid a series of rules specifically intended to limit interference potential of analog devices in a band allocated to various licensed radio services simply because it deliberately engineered the device in a particular manner. The Commission, in the Remington Arms case, carefully

⁵ The pole mounted devices certainly could use an external power supply, as was noted in the Remington Arms waiver proceeding, and therefore battery capacity is not a valid argument for waiver of the power rules in this proceeding for the pole mounted devices. The Commission should, under any circumstances, deny the proposed waiver to the pole mounted devices, as the alleged justification fails for that configuration of the device.

noted that the 902-928 MHz band was not being proposed for waiver, and dismissed concerns stated by Cellnet, Nextel and others about interference from the devices to other users, within and adjacent to the 902-928 MHz band.

7. Finally, the proposed waiver constitutes rulemaking by rule waiver. Petitioners waited to file their petition until the outcome of the Remington Arms proceeding was determined, and attempted to “piggyback” their waiver petition on the outcome of the Remington Arms proceeding. The instant Petition, however, deals with a completely different band; affects additional licensed users; is not limited to deployment of the subject devices by law enforcement agencies only, as was the Remington Arms waiver; and the instant Petition fails utterly to explain the impact of its proposed waiver on services such as the Amateur Service. What is the interference range of the devices in various applications? What is the effect of nearby Amateur Radio transmissions on these devices? The petition fails to establish that the underlying purposes of the rules to be waived (i.e. to distinguish between the interference potential to licensed radio services between wideband digital devices and analog devices) would not be frustrated by this proposed permanent waiver. These are not “unique or unusual factual circumstances,” as are required for a rule waiver pursuant to Section 1.925. Rather, they are circumstances entirely of the manufacturers’ own making. The manufacturer wants to establish a market for the devices, but that alone does not mean

that the devices are necessary or beneficial for public safety or antiterrorism activities, as opposed to a device that meets the Section 15.245, 15.247 and 15.249 Rules. It cannot under any circumstances be said that the manufacturer has no reasonable alternative. One alternative, for example, would be to configure the device to operate exclusively at 2450-2483.5 MHz, where there is already a public safety allocation, and propose to license the devices. Another alternative would be to configure the devices as digital devices, thus obviating the necessity for the waiver.

8. The Commission should not grant this waiver, and certainly not as a permanent waiver. Petitioners should be required to initiate a rulemaking proceeding if they feel that the rules governing analog Part 15 devices in the subject band should be changed, and could be changed consistent with interference avoidance. Granting repeated waivers for Part 15 analog devices which do not meet the fundamental interference avoidance requirement of the power spectral density limit adds to the aggregate noise levels in the subject bands and contributes to the already prevalent “tragedy of the commons” interference problems at, for example, 902-928 MHz, making the band less useful for other Part 15 devices and systems, and especially for licensed services such as the Amateur Service.

Accordingly, ARRL, the National Association for Amateur Radio, respectfully requests that the Petition for permanent waiver be denied. Alternatively, if the Commission is inclined to grant the waiver, which it

clearly should not, the waiver should be granted only temporarily, in order to permit time for redesign and reconfiguration of

the devices to operate in accordance with Sections 15.245(b), 15.247(e) and 15.249(a) of the Commission's rules.

Respectfully submitted,

ARRL, THE NATIONAL ASSOCIATION
FOR AMATEUR RADIO

225 Main Street
Newington, CT 06111

By: Christopher D. Imlay
Christopher D. Imlay
Its General Counsel

BOOTH, FRERET, IMLAY & TEPPER, P.C.
14356 Cape May Road
Silver Spring, MD 20904-6011
(301) 384-5525

January 30, 2006

CERTIFICATE OF SERVICE

I, Christopher D. Imlay, do hereby certify that I caused to be mailed, via first class U.S. Mail, postage prepaid, a copy of the foregoing COMMENTS OF ARRL, THE NATIONAL ASSOCIATION FOR AMATEUR RADIO, to the following, this 30th day of January, 2006.

William Cook, Esq.
Adrian B. Copiz, Esq.
Alston & Bird LLP
601 Pennsylvania Avenue, N.W.
North Building, 10th Floor
Washington, D.C. 20004

Imlay_____

_____Christopher D.

Christopher D. Imlay