

Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, DC 20554

In the Matter of	)	
	)	
ODF Optronics, Ltd.	)	
	)	ET Docket No. _____
Request for Waiver of	)	
Section 15.247 of	)	
The Commission's Rules	)	

**REQUEST FOR WAIVER**

ODF Optronics, Ltd. ("ODF"), by its attorneys and pursuant to Section 1.925 of the Commission's rules,<sup>1</sup> hereby requests a waiver of Section 15.247 of the rules<sup>2</sup> to allow for the marketing and operation of its Eyeball R1 device in the United States. The Eyeball R1 has been operating in the United States for several years under the terms of a waiver granted to the Remington Arms Company, Inc. ("Remington"), through which upwards of 600 Eyeball R1 kits have been repeatedly deployed, with no reports of any harmful interference by law enforcement personnel or area businesses, commercial institutions or residences. ODF developed and manufactured the Eyeball R1 on an OEM basis for Remington, and, in addition, conducted all compliance testing and other technical activities supporting the initial waiver request

As of April 15, 2008, however, Remington will no longer market the Eyeball R1 and will cease all involvement with the product. ODF will take over servicing of the device to Remington's current customers and also will market the device in the United States. For this reason, ODF is requesting that the Commission grant it the same waiver, under the exact terms and conditions, as it granted Remington. Grant

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<sup>1</sup> 47 C.F.R. § 1.925.

<sup>2</sup> 47 C.F.R. § 15.247.

of this waiver request will allow ODF to continue to provide the product, one that gives law enforcement agencies a unique, versatile, life-saving technology sought by officers entering hazardous situations, in the United States.

## **I. BACKGROUND**

ODF manufactures the Eyeball R1, which is a video and audio imaging device used by law enforcement entities to conduct video and audio surveillance in locations that otherwise could not be observed directly. The Eyeball R1 provides live color or black and white video of a 55-degree conical field of view to a handheld remote that also controls the position of the imaging sensor. The device is designed to be placed into small, hazardous or confined areas, such as buildings, caves, tunnels and alleys, to gather surveillance information necessary for law enforcement operations. Approximately the size of a baseball, it can be thrown, rolled or lowered to a remote location from a place of safety, reducing the risk of injury to or loss of life.

The Eyeball R1 uses analog modulation and operates on two frequency ranges: at 2400-2483.5 MHz for transmitting audio and video to the handheld receiver/control, and at 902-928 MHz to transmit the device command and control data. With regard to the 2400-2483.5 MHz transmissions, the Eyeball R1 does not comply with the Commission's rules.<sup>3</sup> The device employs analog modulation, but operates at too high a power to comply with the Part 15 rules for analog devices operating on 2400-2483.5 MHz. Specifically, the Eyeball R1 operates at a power level of 357 mW, which exceeds the allowable analog power limits.<sup>4</sup> Were the Eyeball R1 a digital device, it would comply with the Commission's power rules for Part 15 digital devices operating on the band.<sup>5</sup> Thus, ODF requests that the device be

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<sup>3</sup> The device complies with the Part 15 rules for operations at 902-928 MHz and ODF seeks no waiver for that aspect of its operations.

<sup>4</sup> See 47 C.F.R. § 15.249(a).

<sup>5</sup> See 47 C.F.R. § 15.247.

allowed to operate at the power level it would be allowed were it a digital device.<sup>6</sup> For this reason, ODF seeks a waiver of Section 15.247 of the rules to allow the Eyeball R1 to operate under these rules as if it were a digital device.<sup>7</sup>

In April 2005, Remington requested a waiver of the Part 15 rules to allow it to operate the Eyeball R1 in the United States.<sup>8</sup> The Commission granted the waiver in November 2005.<sup>9</sup> In doing so, the Commission placed certain conditions on the operations of the device: that the device must be certified under Section 15.247, but need not employ digital modulation; that the device may only be marketed to law enforcement entities and may only be used for safety-of-life and training purposes; that the device must be marked in a certain manner. As noted above, ODF will accept these same conditions.

## **II. GOOD CAUSE EXISTS FOR, AND THE PUBLIC INTEREST WOULD BE SERVED BY, WAIVER OF THE PART 15 RULES.**

A waiver is warranted under the present circumstances. The Commission has authority to waive its rules when the underlying purpose of the rule would not be served or would be frustrated by application of the rule and waiver of the rule is in the public interest.<sup>10</sup> In this instance, the Commission already has determined that a waiver is warranted.<sup>11</sup> It found in granting the waiver that the public interest would be served because law enforcement would have access to a potentially lifesaving device. It also determined that the Commission policy would not be

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<sup>6</sup> The Eyeball R1 does not comply with the frequency hopping requirements for digital devices operating in the 2400-2483.5 MHz band, as set forth in Section 15.247(a).

<sup>7</sup> ODF also seeks waiver of the power spectral density requirements of Section 15.247, as it would be unable to meet these requirements of the rule.

<sup>8</sup> *In re Petition of: Remington Arms Company, Inc. For Waiver of Sections 15.245, 15.247(b) and 15.247(e) of the Rules and Regulations*, Requested Waiver, ET Docket No. 05-183 (filed April 22, 2005) (“Remington Waiver Request”).

<sup>9</sup> *In re Petition of: Remington Arms Company, Inc. For Waiver of Sections 15.245, 15.247(b) and 15.247(e) of the Rules and Regulations*, Order, ET Docket No. 05-183 (rel. November 18, 2005) (“Remington Waiver”).

<sup>10</sup> 47 C.F.R. § 1.925(b)(3).

<sup>11</sup> Remington Waiver at ¶ 6.

undermined because there is little risk of interference to other operations and the device cannot be designed to comply with the rules.<sup>12</sup>

The same reasoning holds true in this instance. As Remington is exiting the market, ODF simply seeks the same waiver for the same device and under the same terms to continue to market and sell the product in the United States. In sum, grant of the waiver will continue to effectuate the purpose of the Part 15 rules by enhancing public safety, as well as the Commission's overall policy of allowing prudent and efficient use of the spectrum.

*The Eyeball R1 Cannot Comply with the Rules*

The Commission's rules require that the unlicensed operation of an analog device operating in 2400-2483.5 MHz band meet the requirements of Section 15.249, which limits emissions to a maximum average fundamental level of 50 mV/m and a peak level of 500 mV/m.<sup>13</sup> However, the rules allow digitally modulated devices operating in the band on an unlicensed basis to operate at a higher power level of peak transmitter output power of 1 W and an EIRP of 4 W.<sup>14</sup> As explained in the Remington waiver proceeding, the device does not comply with FCC rules because it was not developed for the U.S. market.<sup>15</sup> Additionally, redesigning it as a digital device would pose several technical challenges. Use of digital modulation would require higher power operations, which would decrease the already short (two-hour) battery life of the device.<sup>16</sup> And, the analog signal provides better quality video pictures, especially as the signal fades.<sup>17</sup>

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<sup>12</sup> *Id.*

<sup>13</sup> 47 C.F.R. § 15.249.

<sup>14</sup> *See* 47 C.F.R. § 15.247.

<sup>15</sup> Ex Parte of Remington Arms Company, Inc., ET File No. 05-183 (filed July 15, 2005) (filed as "Submission to the Record").

<sup>16</sup> *Id.* Increasing the battery size would increase the size and weight of the device to unacceptable levels.

<sup>17</sup> *Id.*

In addition, ODF requires waiver of Section 15.427(e) of the rules, which establishes the power spectral density limit for digital intentional radiators.<sup>18</sup> As the Eyeball R1 is an analog device, compliance with this rule is technically not possible.

*The Eyeball R1 Saves Lives*

As the Commission determined, use of the Eyeball R1 will serve the public interest by saving lives. Without it, law enforcement would be forced to rely on use of pole cameras and fiber optic systems, which require officers to get dangerously closed to a potentially hazardous situation. Use of the Eyeball R1 will keep officers further distance from danger, protecting lives. Grant of the waiver will allow law enforcement to have continued access to the device.

*Operations under the Current Waiver Have Been a Success*

Since November 2005, the Eyeball R1 has been operating in the United States under the terms of the waiver granted to Remington without any reports of interference. In granting the waiver to Remington, the Commission found that the potential for any inference from the operations of the Eyeball R1 would be very limited, especially given the restrictions on the use of the device by law enforcement.<sup>19</sup> The Commission also found that there were good reasons for employing analog rather than digital technology in the Eyeball R1.<sup>20</sup>

The same reasoning holds true here. The Eyeball R1 will be marketed and operated in the same manner as under the terms of the Remington waiver. Given the limited potential for interference, as found by the Commission and discussed

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<sup>18</sup> 47 C.F.R. § 15.427(e).

<sup>19</sup> Remington Waiver at ¶¶ 12-14.

<sup>20</sup> Remington Waiver at ¶ 17.

further below, grant of this waiver should not pose a threat of any additional interference.<sup>21</sup>

*Limited Risk of Harmful Interference*

The potential for interference by the Eyeball R1 will be extremely limited and will rarely exceed a limited area of law enforcement operations.<sup>22</sup> In many instances, the area of use would be under police control, evacuated of persons who may be using other Part 15 devices. As noted in the Remington Waiver Request, in the worst case scenario, only devices located within a one-block radius, or within the same building, could possibly be affected by use of the Eyeball R1.<sup>23</sup> The device will operate only during limited time periods, during a potentially dangerous situation or during law enforcement training exercises, which occur in isolated and controlled locations. And, the useful battery life of the Eyeball R1 is only two hours, so the length of time of any potential harmful interference also would be very limited. In sum, the Eyeball R1 operates only in a limited, transitory and temporary manner, and always under the control of law enforcement. Under such circumstances, there is almost no risk of harmful interference by the device to other radio operations.

Moreover, the fact that the Eyeball R1 uses analog modulation does not raise the risk of interference to other devices any more than if it used a digital signal. As demonstrated in the Remington waiver proceeding, test data indicates that concerns raised about the potential for interference to fixed or unlicensed services are unwarranted.<sup>24</sup> Thus, ODF's waiver request is essentially a request to waive the

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<sup>21</sup> Test data was submitted in the original waiver proceeding to satisfy concerns about potential interference. See Remington Arms Company, Inc., Submission of Report, ET File No. 05-183 (filed July 5, 2005) ("Test Data"). ODF incorporates that data herein in support of its request.

<sup>22</sup> Despite deployment of hundreds of devices, there have been no reports of interference by the Eyeball R1.

<sup>23</sup> In fact, in ODF's experience, the range of potential interference is even less than this originally predicted one block radius.

<sup>24</sup> See Remington Waiver at ¶ 8; Test Data (attached).

allowable emissions type. Section 15.247(b)(3) permits digital transmissions on the 2400-2483.5 MHz band at power levels up to 1 W, and if the Eyeball R1 were a digital device then it would meet the requirements of this rule. However, the fact that the device is analog does not mean that its operations would be detrimental to other nearby devices, as the transmissions generate a similar level of interference as permitted for digital devices. In fact, the Commission found that operation of the Eyeball R1 “should have less interference potential than many other products already operating under our rules.”<sup>25</sup>

### III. CONCLUSION

For the foregoing reasons, ODF requests that the FCC grant it a waiver of Section 15.247 of the rules to allow U.S. law enforcement continued access to the Eyeball R1 video and audio surveillance device.

Respectfully submitted,

ODF Optronics, Ltd.

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<sup>25</sup> Remington Waiver at ¶ 10.