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October 10, 2006

Ms. Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 12th Street SW  
Washington DC 20554

**Re: ET Docket No. 04-373**  
**SafeView, Inc., Request for Waiver of Sections 15.31 and 15.35 of the**  
**Commission's Rules**  
***Ex Parte Communication***

On behalf of L3 Communications SafeView, Inc., pursuant to Section 1.1206(b)(1) of the Commission's Rules, I am electronically filing this written *ex parte* communication.

The Commission granted a waiver to SafeView in the above-referenced docket on August 4, 2006.<sup>1</sup> Specifically, the Commission (1) waived Section 15.31(c), which ordinarily requires average emissions from a swept-frequency device to be measured with the sweep stopped, thus enabling SafeView to take average measurements with the sweep running; and (2) waived Section 15.35(b), which specifies a maximum peak-to-average ratio of 20 dB, permitting SafeView a peak-to-average ratio 21 dB higher.

FiberTower Corporation (herein, "Petitioner") filed a Petition for Reconsideration on September 5. SafeView opposed on September 15. Petitioner replied on September 22.

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<sup>1</sup> *SafeView, Inc., Request for Waiver of Sections 15.31 and 15.35 of the Commission's Rules*, ET Docket No. 04-373, Order, DA 06-1589 (released Aug. 4, 2006) (Order).

Although the pleading cycle is complete,<sup>2</sup> SafeView requests leave to respond to a particular statement in Petitioner's Reply.<sup>3</sup>

Petitioner raises a new point that fundamentally misapprehends the nature and purpose of the Commission's waiver process. Petitioner says:

[A] waiver was required, meaning that -- unless the FCC's rules are incorrect -- the SafeView device is more likely to cause harmful interference than rule compliant devices.<sup>4</sup>

Petitioner seems to say that non-compliance alone is enough to make a device a source of interference. If that were true, then a waived device -- which is non-compliant by definition -- would always be a greater interference threat than a compliant device. This line of argument would justify extraordinary interference protection conditions in any waiver grant.

But Petitioner's initial premise -- that noncompliance equals threat of interference -- is wrong, both as a general statement and certainly in the case of SafeView's device.

Part 15 regulates a vast domain of highly dissimilar devices. This is especially true of Subpart C ("Intentional Radiators"), which includes the SafeView product. The Commission's database lists 34,000+ granted applications in this category, with dozens of new ones appearing every week. No set of rules can possibly provide detailed specifications for all of these. At one time the Commission did try to maintain separate rule sections for each type of device, but the result, not surprisingly, was rules that were "lengthy and difficult for the public to understand."<sup>5</sup> A 1989 proceeding replaced the specific categories with general technical rules that, for the most

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<sup>2</sup> See 47 C.F.R. Sec. 1.106.

<sup>3</sup> There are other respects as well in which Petitioner's Reply does not accurately reflect SafeView's positions. As to those, we refer the Commission to the record of the proceeding.

<sup>4</sup> Reply at 3.

<sup>5</sup> *Revision of Part 15 of the Rules*, 4 FCC Rcd 3493 at para. 4 (1989) (*1989 Report & Order*).

part, merely limit emissions in various frequency bands, without restricting technical or operational characteristics such as bandwidth, duty cycle, modulation, or application.<sup>6</sup>

The Commission adopted this approach in large part to encourage the development of new technologies.<sup>7</sup> The Commission understood that the new rules would regulate devices that did not yet exist, and whose detailed characteristics were then unpredictable. (No one in 1989 would have foreseen the SafeView device.)

In planning for a diverse and unknowable environment, the most rational option is to make rules that are conservative enough to minimize the probability of even a worst-case Part 15 device interfering with a worst-case receiver. But this carries a logical consequence: *The resulting rules are more conservative than necessary to protect most receivers from most Part 15 devices.* Worst-case rules, by definition, provide a degree of "headroom" for non-worst-case devices. Many Part 15 devices could have the rules relaxed, to a greater or lesser extent, without creating any threat of interference. Worst-case combinations aside, a controlled degree of non-compliance need not imply a more interfering device.

This line of reasoning applies directly to the two rules waived in the Order.

Section 15.31(c) requires measuring a swept-frequency system with the sweep stopped. This always yields the worst-case result. Actual average emissions, measured with the sweep running, will always be lower. How much lower depends on the particular device. Because the same rules must cover a potentially wide variety of devices, it made sense to craft the rules so as to capture the worst-case emissions. In some devices, however, this approach overstates the interference potential by an extremely wide margin. This is especially true for a device that sweeps quickly or over a broad range of spectrum. The SafeView device does both, sweeping over a full 5.75 GHz at the extremely fast rate of 1.1 MHz per nanosecond.<sup>8</sup> As a result, the

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<sup>6</sup> *Id.* at para. 20. A few exceptions, particularly technologies developed after 1989, such as ultra-wideband and broadband over power line, have more detailed regulations. *See* 47 C.F.R. Part 15, Subparts F, G.

<sup>7</sup> *Revision of Part 15 of the Rules* at para. 12 ("The [pre-1989] system that requires rule making for authorization of new Part 15 devices imposes delays and costs on innovating parties that tend to have a chilling effect on the development and marketing of new products.")

<sup>8</sup> Letter from Mitchell Lazarus to Marlene H. Dortch, Secretary, FCC at 2 (filed March 11, 2005).

average energy in the measurement bandwidth is extremely low, and the signal is actually present in the measurement bandwidth only for very short time intervals.<sup>9</sup>

Given these characteristics, measurement in accordance with the rule produces a large exaggeration of the interference risk. The Commission is entirely reasonable in concluding that measurement with the sweep running yields a more realistic indication of the interference potential.

Similarly, the Commission introduced a 20 dB peak-to-average ratio in 1989 to cover a large and unknown range of devices. The Commission did *not* conclude that anything less than a 20 dB ratio is always non-interfering, while anything greater must be interfering in all cases. Rather, the 20 dB ratio was a conservative estimate geared to protecting most receivers from most Part 15 devices most of the time.

Petitioner says:

Unless the [20 dB] limit established by the Commission in section 15.35(b) is simply an arbitrary number, then [the 21 dB increase granted to SafeView] certainly must be significant, and it presents a greatly increased danger of interference to nearby primary licensed uses.<sup>10</sup>

We disagree. Contrary to Petitioner's implication, the 20 dB ratio is indeed an arbitrary number, at least in the sense of being an estimate meant for broad applicability. It is simply not true that a 21 dB increase over that value must always present a greatly increased danger of interference. In setting the ratio, the Commission's primary concern was not a swept system like SafeView's, but pulsed modulations.<sup>11</sup> Given the particular technical characteristics of the SafeView device, the Commission can (and did) make a reasonable termination that another 21 dB in peak emissions would not lead to harmful interference.

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<sup>9</sup> Energy in the measurement bandwidth, averaged over 8 microseconds or more, is only one part in 8,900 of the total peak energy, and is present in the measurement bandwidth for less than a nanosecond at a time. See *id.* at 2, 5. This is less time than light takes to travel one foot.

<sup>10</sup> Reply at 3.

<sup>11</sup> See *1989 Report & Order* at paras. 27, 34, 52, 91, 93-94.

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## CONCLUSION

Petitioner is incorrect in stating that a waived device is inherently more interfering than a compliant device. Because the rules must cover a vast array of equipment, most of it unknown when the rules were drafted, the Commission necessarily took a worst-case approach. A non-worst-case device may be able to exceed the limits without causing any increased risk of interference.

Please do not hesitate to call with any questions.

Respectfully submitted

Mitchell Lazarus  
Counsel for L3 Communications SafeView, Inc.

cc: Courtesy service list

## **TECHNICAL CERTIFICATION**

I am a technically qualified person who reviewed the foregoing letter. I certify that the technical statements therein are correct to the best of my knowledge.

Scott Trospen  
Director of Hardware Development  
L3 Communications SafeView, Inc.

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