

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

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| In the Matter of   | ) |                    |
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| Amendment of Parts 1, 2, 22, 24, 27, 90 and 95<br>of the Commission’s Rules to Improve Wireless<br>Coverage Through the Use of Signal Boosters | ) | WT Docket No. 10-4 |
|  | ) |                    |
| Wireless Telecommunications Bureau Seeks<br>Comment on ClearRF Request for<br>Determination of Equivalent Protection                           | ) | DA 14-304          |
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**COMMENTS OF CTIA – THE WIRELESS ASSOCIATION®**

CTIA – The Wireless Association® (“CTIA”) hereby opposes the request filed by ClearRF on February 26, 2014, which requested an “equivalent protection” determination pursuant to Section 20.21(e)(10) of the Commission’s rules for its proposed M2M signal booster.<sup>1</sup> The *Signal Booster Report and Order* adopted last year by the Commission provided that any Consumer Signal Booster manufacturer which could not meet the Commission’s newly-adopted technical parameters could nonetheless satisfy the FCC’s Network Protection Standard if the manufacturer could demonstrate that the booster provided equivalent protections.<sup>2</sup> CTIA notes that the Commission’s equivalent protection regime was intended to be a limited exception and was not designed to apply to the factual circumstances presented by ClearRF. In addition, ClearRF has failed to provide sufficient evidence in support of its request and, by so

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<sup>1</sup> Letter from Shawn Taylor, Chief Operating Officer, ClearRF to Roger Noel, Chief, Mobility Division, Wireless Telecommunications Bureau, WT Docket No. 10-4 (Feb. 26, 2014) (“ClearRF Request”). See also *Wireless Telecommunications Bureau Seeks Comment on ClearRF Request for Determination of Equivalent Protection*, Public Notice, DA 14-304 (March 5, 2014) (“Public Notice”).

<sup>2</sup> *Amendment of Parts 1, 2, 22, 24, 27, 90 and 95 of the Commission’s Rules to Improve Wireless Coverage Through the Use of Signal Boosters*, Report and Order, 28 FCC Rcd 1663, ¶¶ 75-76 (2013) (“*Signal Booster Report and Order*”).

doing, has precluded the analysis of its product’s compliance with the Network Protection Standard required to obtain a finding of “equivalent protection” pursuant to Section 20.21(e)(10) of the Commission’s rules.

**I. THE COMMISSION’S EQUIVALENT PROTECTION REGIME WAS INTENDED TO BE A LIMITED EXCEPTION.**

CTIA opposes the ClearRF petition because it contravenes the intent of the Commission’s signal booster regime – a regime that was the result of tireless efforts by the Commission and industry stakeholders to develop a booster ecosystem that would not undermine wireless networks. In developing its rules, the Commission adopted the equivalent protection framework *not* to provide booster manufacturers with an immediate opportunity to opt out of compliance, but rather to ensure that its interference protection standards would not stifle future innovation. Further, this regime was intended to apply only to consumer signal boosters, and it is unclear from ClearRF’s submission whether it is properly classified as a consumer signal booster.

When the Commission adopted its rules for signal boosters, it noted that “[t]hese [technical] safeguards reflect existing technologies, which can be rapidly developed into products that will be available to consumers in the near term. We recognize, however, that signal booster technology will continue to evolve and we seek to adopt rules which foster future product innovation.”<sup>3</sup> Thus, the Commission made clear that it primarily intended for its equivalent protection mechanism to serve as a means of “future-proofing” its technical standards. What the Commission plainly did *not* intend was for parties to immediately begin using this process as an easier path to market for non-conforming signal boosters, as ClearRF is attempting to do here.

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<sup>3</sup> *Id.* at ¶ 75.

Moreover, the Commission’s equivalent protection regime is limited to consumer signal boosters. The Commission has defined a consumer signal booster as one that is “marketed and sold for personal use by individuals,” that are “designed to be used ‘out-of-the-box,’” and can be installed by individuals without third party, professional assistance.<sup>4</sup> ClearRF has described a M2M device that appears to be more properly classified as an industrial signal booster. While ClearRF has provided scant information regarding its WRE2710 model M2M signal booster, its promotional materials for its current M2M signal booster indicate that is intended for industrial and/or commercial uses, not for personal use.<sup>5</sup> As the Commission has adopted different procedures and requirements for consumer and industrial signal boosters, it is essential that all boosters be properly classified and regulated. If ClearRF’s WRE2710 M2M signal booster is, in fact, an industrial signal booster, it is not eligible for a finding of equivalent protection.<sup>6</sup> The Commission should closely examine this matter, ensure that ClearRF’s booster is properly classified and, if the Commission finds that this product is an industrial booster, that it meets the requirements for *industrial* boosters.

## **II. CLEARRF HAS PROVIDED INSUFFICIENT EVIDENCE IN SUPPORT OF ITS REQUEST FOR DETERMINATION OF EQUIVALENT PROTECTION.**

ClearRF states that its signal booster model WRE2710 requires a finding of equivalent protection with respect to two of the Commission’s Network Protection Standard requirements: (1) the requirement to provide equivalent uplink and downlink gain, and (2) the requirement not

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<sup>4</sup> *Id.* at ¶ 13.

<sup>5</sup> ClearRF, ClearRF’s Machine-To-Machine M2M Cell Signal Booster, *at* [http://clearrf.com/index.php/download\\_file/view/144/138/](http://clearrf.com/index.php/download_file/view/144/138/) (last visited March 24, 2014) (listing fire and security, smart meters, digital signage, ATM machines, cashless vending, and kiosks as potential applications for ClearRF’s M2M booster).

<sup>6</sup> *Signal Booster Report and Order* at ¶¶ 75-76 (limiting the equivalent protection framework to commercial signal boosters).

to exceed the 15 dB maximum gain limit for directly connected signal boosters.<sup>7</sup> ClearRF contends that its booster cannot apply more gain on the uplink without violating power limits, and that additional downlink gain is necessary for optimal data transmission.<sup>8</sup> ClearRF states that its booster “undoubtedly meets and exceeds the Network Protection Standard set forth by the FCC.”<sup>9</sup> However, ClearRF has not provided technical data sufficient to justify its request. For example, ClearRF has provided no information about the frequency bands it would use, the air-interface(s) it would support, or the types of M2M devices with which it would operate. In support of its request, ClearRF has provided only cursory and conclusory *ipse dixit* statements regarding its booster’s function and capabilities. As a result, it is very difficult to evaluate and respond to ClearRF’s submission.

Just as ClearRF has not provided sufficient information for parties to respond to its request, it also has not provided enough information to enable the Commission to make an informed finding regarding equivalent protection. For the Commission to issue a finding of equivalent protection, it is incumbent upon the manufacturer to “demonstrate that the booster provides equivalent protections.”<sup>10</sup> ClearRF has failed to do so here.

To the extent that ClearRF does provide technical statements in support of its request, they are inaccurate and/or misleading. For example, ClearRF suggests that boosters directly

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<sup>7</sup> ClearRF Request at 1.

<sup>8</sup> ClearRF Request at 1-2 (“Applying gain to the uplink unnecessarily will only result in exceeding the 30 dBm power out limit. . . . The receiver is the weak link in the M2M device. In many cases 15 dB is not enough gain to get the full potential network speed.”).

<sup>9</sup> *Id.* at 2.

<sup>10</sup> *Signal Booster Report and Order* at ¶ 75. *See also id.* at ¶ 76 (“If the Wireless Telecommunications Bureau determines that *the proponent has shown equivalent protection that satisfies the Network Protection Standard*, the proponent may then seek equipment certification from the Office of Engineering and Technology.”) (emphasis added).

connected to M2M devices require their own technical standards, and that the Commission's failure to develop them is the bedrock of its request for an equivalent protection finding.<sup>11</sup> This statement ignores the fact that the Commission's rules provide specific requirements for signal boosters that are directly connected to a phone.<sup>12</sup> Moreover, industry standards (such as 3GPP's LTE standards) for user equipment are not handset-specific – there is no differentiation among different user equipment types – and there is no valid reason why these regulations could or should not apply to M2M boosters. Thus, there is no basis for ClearRF's assertion that by virtue of being connected to a M2M device, the Commission should overlook its balanced gain requirement to allow its device to comply with output power requirements.<sup>13</sup> ClearRF also contends that the additional downlink gain produced by its proposed booster is a necessary component of device performance.<sup>14</sup> This is not true – the 15 dB of gain permitted by the rules is more than enough for consumer boosters to ensure good performance and data rates. Moreover, the 15 dB gain limit was established to ensure that the wireless network would be fully protected and ClearRF has provided no technical data that demonstrates its proposed device would protect the wireless network from harm.

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<sup>11</sup> ClearRF Request at 1 (“The FCC 13.21 rules do not clearly account for signal boosters designed for use with M2M devices where the booster amplifier is directly cabled to the M2M device's antenna port (not intended to be connected to a cell phone). This is particularly important when considering the power out capabilities of the M2M device connected to the amplifier and how the network controls the output power of the device.”).

<sup>12</sup> 47 C.F.R. § 20.21(e)(8)(i)(C)(2)(iii).

<sup>13</sup> ClearRF Request at 1 (“The M2M device has sufficient output power to nearly reach the FCC . . . 30 dBm limit on its own, making it unnecessary to apply much gain to the uplink (especially in weak signal areas where the M2M device will be transmitting at maximum power out).”).

<sup>14</sup> ClearRF Request at 2.

For the Commission and interested parties to fully analyze the potential harmful effects of ClearRF's proposed booster, ClearRF must provide appropriate technical information. Specifically, ClearRF should be required to provide a sample link budget for its device to demonstrate why it would be necessary to exceed the 15 dB gain limit for boosters. Additionally, ClearRF's submission also is insufficient because it only addresses the control of downlink transmissions. ClearRF must provide information on how it intends to control the uplink transmissions during the operation of its device. More specifically, it will need to describe how it will prevent the uplink amplifier from going into saturation – a protection that needs to be built into the device to protect the wireless network from interference.

The Commission has made clear that booster manufacturers bear the burden of demonstrating that they will not disrupt the carefully crafted rules designed to protect commercial wireless networks from harmful interference. Thus, it is ClearRF's responsibility to provide the Commission with the data needed to support its request. In the absence of such a submission, the Commission cannot make an informed finding on equivalent protection, nor may potentially affected wireless carriers fully analyze and comment on the impact of ClearRF's proposed operations. The Commission therefore must conclude that ClearRF has failed to properly justify its request for equivalent protection, and thus deny the proposal.

### III. CONCLUSION

As explained above, the Commission should deny ClearRF's request for a finding of equivalent protection for its M2M signal booster. As an initial matter, the Commission's equivalent protection mechanism was not intended to apply to industrial signal boosters such as ClearRF's WRE2710 model, and it is unclear whether this booster is even eligible for such regulatory treatment. Even if it were, however, ClearRF has failed to substantiate its technical assertions, and as such has failed to meet the standard set forth by the Commission in the *Signal Booster Report and Order*. The only proper result, therefore, is for the Commission to deny ClearRF's request.

Respectfully submitted,

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